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SPECIES BLANCOANAE

A CRITICAL REVISION OF THE PHILIPPINE SPECIES OF PLANTS DESCRIBED BY BLANCO AND BY LLANOS

BY

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PREFACE

Blanco's Flora de Filipinas was first issued in 1837; followed by a second edition in 1845, printed a few months after the author's death; and a third edition published in 1877–83 under the auspices of the Augustinian Order of which Blanco was a member. The publication is merely a conventional one, incomplete, imperfect, and presenting no innovations in taxonomy. Naturally the work is chiefly of local interest, as a high percentage of the species described are confined to the Philippines. To the student of the Philippine flora, as such, and to authors of monographs and revisions of families and genera extending to the Philippines, it is important that the status of Blanco's species be determined. However, as no botanical material representing Blanco's species was preserved by him, or if preserved, is no longer extant, the matter of determining the identity of very many of his species presents by no means a simple problem. The object of the present work is to record what I have been able to determine regarding the status of Blanco's species and their relationships with those described by other authors, based on sixteen years experience in prosecuting botanical work in the Philippines.

Hooker f.[1] considered that, on account of the unsatisfactory nature of Blanco's work, it was undesirable to devote time to the identification of his species; which, perhaps, well reflects the attitude of the botanists of the middle of the last century. No botanist, not primarily interested in the Philippine flora, was in a position to do much actual work on the status of Blanco's species, and up to the immediate present data and material by which Blanco's species could satisfactorily be determined have not been available. Thus, in general, Blanco's species were considered to be of little importance and, being difficult of interpretation to the average botanist working only with dried material, were frequently ignored or briefly discussed as unknown or imperfectly known ones by authors of various monographs.

The necessity for a critical determination of the status of Blanco's species and of their relationships with those described

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[1] Hooker, J. D., and Thomson, T. Flora Indica 1 (1855) Introductory Essay 56.

by other authors is a natural corollary of the general acceptance of the principle of priority in the selection of the names of species where synonymy is involved. The matter has already been discussed by me in connection with my detailed study of the species described in Rumphius's Herbarium Amboinense,[2] from which the following passage (p. 43) is quoted:

> Up to the close of the last century comparatively little attention was given to the question of priority in the names of plants, and many authors accepted or changed generic and specific names at will. It is true that in a majority of cases names well established were generally accepted, but changes were often made for the most trivial reasons. In work prosecuted under these lax but easy methods of selecting names for plants, the exact identity of obscure species was a matter of relatively slight importance.
>
> With the establishment and general acceptance of the principle of priority in selecting the name of species, it has become important, from the view point of stability of nomenclature, to determine so far as possible the exact status of the species described by older authors. It would admittedly be convenient if many of the names proposed by early authors could be discarded, but if we ignore a species of one author, any botanist at any time would be justified in likewise ignoring species proposed by any other author, which would result in a veritable chaotic condition in nomenclature. We can no longer look on the work of this or that author, no matter how incomplete or imperfect, as unworthy of consideration, nor can we accept Hooker's dictum regarding species proposed by such authors as Blanco, that it was undesirable to devote time to their identification.

E. D. MERRILL.

MANILA, P. I., *June 15, 1917.*

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[2] Merrill, E. D. An interpretation of Rumphius's Herbarium Amboinense. Bureau of Science, Manila (1917) 1–595.

INTRODUCTION

THE FIRST EDITION OF BLANCO'S FLORA DE FILIPINAS

The first edition of Blanco's Flora de Filipinas [3] was printed in Manila in 1837. It is an octavo volume consisting of a prologue, a general introduction, and the systematic arrangement and description of about 903 species under binomial names. The work is written wholly in Spanish. The prologue briefly relates the circumstances under which the work was prepared and contains a review of the botanical work accomplished by Blanco's predecessors in the Philippines; namely, Fathers Clain, Delgado, Mercado, and Santa Maria, but with no mention of the vastly more important work of Camel; and a brief mention of the work of Née and Pineda, of the Malaspina Expedition, but no mention of the more important explorations of Haenke, of the same expedition. The general introduction, occupying pages IX–LXXVIII, consists of an explanation of the terms used in descriptive botany and an explanation of the Linnean system of classification, with a list of the admitted genera arranged under their Linnean classes.

The generic descriptions are greatly abbreviated, but the specific descriptions are usually long and detailed, although often general in nature; some of them are very short and imperfect. To these are often added long or short discussions, giving data of economic importance, occurrence, time of flowering, native names, etc.; this supplementary data is often of more value in locating and interpreting Blanco's species than are the descriptions themselves. The work is supplied with an alphabetic index to generic names; one to native names, in which not all of the native names mentioned in the text are included; and a tabulation of the various genera according to the economic uses of the various species.

In the text various species that Blanco was unable to refer to their proper generic positions are described under their native names. These are usually placed under the Linnean classes to which they pertain and cannot in any sense of the word be

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[3] Flora de Filipinas. Segun el Sistema sexual de Linneo. Por el P. Fr. Manuel Blanco, Agustino Calzado (1837) LXXVIII+1–887.

treated as genera, nor were they so considered by Blanco. They include descriptions of:

Alamag.
Apulong.
Balibai.
Banago.
Binouang.
Bitlag.
Calamansalai.
Calicot.
Camotain.
Corong.
Cunalon.
Doctojon.
Ge-jua.
Hinguio.
Iloilo.
Inoyaban.
Lanzones.
Lapolapo.
Loctong.
Longayan.
Malulucban.
Oyisan.
Palindan.
Pandapanda.
Pasac.
Patdang labuyo.
Putian.
Sangumay.

In the present work no special attempt has been made to locate these species, except in those cases where Blanco himself or other authors have later made them the bases of binomials. With few exceptions none of the descriptions have any bearing on questions of nomenclature.

The new genera proposed, all but three of which have proved to be invalid, as indicated by the reductions here given, are:

Azaola (=*Payena*).
Balingayum (=*Calogyne*).
Calius (=*Streblus*).
Cobanga (=*Canscora*).
Enrila (=*Ventilago*).
Lumanaja (=*Homonoia*).
Lunasia.
Malaisia.
Mamboga (=*Mitragyna*).
Manungala (=*Samadera*).
Palaquium.
Quilamum (=*Crypteronia*).
Quilesia (=*Dichapetalum*).
Soala (= ?).
Sulipa (=*Gardenia*).
Tala (=*Limnophila*).
Tayotum (=*Geniostoma*).

THE SECOND EDITION OF BLANCO'S FLORA DE FILIPINAS

The second edition of Blanco's Flora de Filipinas[4] in plan is the same as the first. It was printed in Manila, and appeared shortly after Blanco's death, which occurred April 1, 1845. In the publication of this work a subsidy of 500 pesos was granted by the local organization, La Sociedad económica de amigos del país.[5]

In this edition about 1,132 species are described under Latin binomials, and 27 under their native names. Four species described in the first edition are excluded while 198 are added, making the total number of species described in the first and

[4] Flora de Filipinas, segun el Sistema sexual de Linneo. Por el P. Fr. Manuel Blanco, Agustino Calzado. Segunda impresion corregida y aumentada por el mismo autor (1845) I–LIX + 1–619.

[5] Blair, E. H., and Robertson, J. H. The Philippine Islands 1493–1898, 50 (1907) 69; 52 (1907) 312.

second editions under binomial or trinomial names, about 1,136. Numerous changes in specific names occur, but these are difficult to detect except by the tedious comparisons of descriptions, as when a name used in the first edition was altered in the second one, the fact was not stated; there are no references to the first edition. In many cases changes of names were purely arbitrary, while others were made in Blanco's attempt to reduce his own species to those of other authors; most such changes are erroneous. The numerous typographical errors in the second edition are probably due largely to the fact that Blanco died before the work was printed, so that proof reading devolved on individuals with little botanical knowledge.

In the second edition four of the generic names proposed by Blanco in the first edition were discarded for those of other authors, and the following new genera were described, all of which fall as synonyms: *Elcana* [=*Cerbera*], *Legazpia* [=*Torenia*], *Salgada* [=*Cryptocarya*], *Llanosia* [=*Ternstroemia*], *Quirosia* [=*Crotalaria*], and *Salceda* [=*Thea*]. Thus of the genera proposed and described by Blanco in the two editions of his work the only valid ones are *Lunasia*, *Malaisia*, and *Palaquium*, with *Soala* remaining as one of entirely doubtful status.

THE THIRD EDITION OF BLANCO'S FLORA DE FILIPINAS

The sumptuous third edition of Blanco's Flora de Filipinas [6] was prepared many years after Blanco's death and is entirely the work of Fathers Celestino Fernandez-Villar and Andrés Naves. The Flora de Filipinas is included in the first three volumes and, with slight and unimportant changes, is an exact reprint of the second edition with the addition of Latin translations of Blanco's descriptions. The authors practically succeeded only in extending the contents of Blanco's compact second edi-

[6] Flora de Filipinas por el P. Fr. Manuel Blanco, Agustino Calzado, adicionada con el manuscrito inédito del P. Fr. Ignacio Mercado, las obras del P. Fr. Antonio Llanos y de un apéndice con todas las nuevas investigaciones Botánicas referentes al Archipielago Filipino. Gran Edicion hecha a expensas de la Provincia de Agustinos Calzados de Filipinas bajo la dirección científica y literaria de los PP. Agustinos Calzados Fr. Andrés Naves y Fr. Celestino Fernandez-Villar. 1 (1877) XXX + 1–350, index I–VI; 2 (1878–79) 1–419, index I–VIII; 3 (1879) 1–271; index I–VI; 4¹ (1880) XVIII + 1–108; 4² (1880) VI + 1–63; 4³ (1880–83) IX + 1–375, *tt. 473*. [See Merrill, E. D. The Dates of Publication of the Third Edition of Blanco's "Flora de Filipinas." *Philip. Journ. Sci.* 12 (1917) *Bot.* 113–116.]

tion through three bulky and unwieldy folio volumes without adding a single item to our knowledge of the Philippine flora. Unfortunately page references to the first and second editions are omitted.

In consideration of the date at which it was printed, it is indeed a curious publication. The third edition follows the Linnean system of classification, one that had been obsolete for at least half a century. The only deviations from the second edition are the additions of a few species from the first edition, that Blanco himself eliminated from the second; and occasionally the substitution of the specific name given in the first edition for the one given in the second. The only praise that can be given in this glorified edition of Blanco's Flora de Filipinas is that the Latin translations made Blanco's descriptions more available to botanists generally; yet nearly forty years before, Walpers [7] had published Latin translations of about 180 of Blanco's diagnoses of new species, which is the part of Blanco's work of most general interest to taxonomists.

Two editions were issued, one the "edición de lujo," the other the "edición económica." The cheap edition differs from the edition de luxe in that it is printed on less expensive paper, and the plates are not colored. The plates differ further from those of the edition de luxe in that they are numbered. The cheap edition was sold at 1.25 dollars per fascicle in the Philippines, and 1.75 dollars outside of the Philippines; while the edition de luxe was sold at 2.25 dollars and 2.50 dollars respectively, the prices in Mexican silver. Each fascicle was advertised to consist of sixteen pages of text and six plates. The cheap edition was to consist of numbered volumes; but the edition de luxe was to be numbered, and the edition limited to 500 copies. The plan of numbering the volumes was apparently abandoned.

The edition de luxe, while an expensive work, is by no means a rare one; but the cheap edition is exceedingly rare. I have seen but a single incomplete copy of the latter, consisting of a complete set of the text and about 140 plates. This copy is in the library of the Bureau of Agriculture, Manila.

The fourth volume of the third edition of Blanco's Flora de Filipinas is by far the most important part of the work. It consists of three separately paged parts, of which the third, the Novissima Appendix, is the only one of real value.

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[7] Linnaea 16 (1842) Litt.-Bericht 1–68.

The first part [8] consists of a reprint of Llanos's papers, with his Spanish diagnoses reproduced and also translated into Latin. It is convenient to have these descriptions reprinted, as Llanos's chief publication, his "Fragmentos," is a rare book. The introduction consists chiefly of biographical notes relating to Llanos's life and botanical work; see p. 25.

The second paper, a botanical curiosity, is that of Mercado [9] originally written in the last third of the seventeenth century. It deals with the medicinal properties of various Philippine plants and the discussions of various species include a curious mixture of fact, superstition, and fable in many cases.[10] The scientific names added by Fernandez-Villar are not always correct. From a botanical standpoint the work is of very slight importance, but it contains some data of economic value and is of interest from a historical standpoint. The introduction contains biographical notes regarding Mercado, an interesting discussion of the early botanical writings of various representatives of the religious orders in the Philippines, and a history of Mercado's manuscript. The original illustrations, in color, were not reproduced when the paper was published.

The 473 plates, illustrating the third edition of the Flora de Filipinas, are usually in two unbound volumes, but in some copies they are scattered through the four volumes of text. They are unnumbered in the edition de luxe, and their proper numbers can be determined only by reference to the text of the Novissima Appendix or to the list of illustrations usually found at the end of the Novissima Appendix or sometimes placed in the first volume of plates. This list consists of six pages numbered by the Roman system.

The identification of the plates is the work of Naves, but there are numerous manifest errors, both in relation to Blanco's species they are supposed to represent and to binomials of other

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[8] Fragmentos de Algunas Plantas de Filipinas no incluidas en la flora de las islas de la primera ni segunda edición dispuestas segun el sistema Linneano por el P. Fr. Antonio Llanos, Agustino Calzado, añadidos con otros trabajos del autor y vertidos al Latin por el P. Fr. Celestino Fernandez-Villar del mismo instituto (1880) XVI + 1–108.

[9] Libro de medicinas de esta tierra y declaraciones de las virtudes de los árboles y plantas que están en estas islas Filipinas compuesto por el P. Predicador Fr. Ignacio de Mercado filipinense del órden de San Agustin hijo del convento de San Pablo de Manila. Corregido é ilustrado con las clasificaciones científicas por el P. Fr. Celestino Fernandez-Villar del mismo instituto (1880) VI + 1–63.

[10] Cook, A. C. Some Filipino Botany. *Plant World* 4 (1901) 1–5.

authors. A large number of them refer to species that were unknown to Blanco or at least to those that were not described by him.

A very high percentage of the species figured are common and well-known ones of wide geographic distribution and include many of the common weeds and the various cultivated species, including the commonly cultivated ornamentals, some of which were introduced into the Philippines after Blanco's time. No attempt was made to select the endemic species in the preparation of the plates nor to confine the illustrations to those species not previously figured by other authors; but about 80 of the total of 473 species figured or less than 17 per cent, represent endemic species. In general the illustrations are good, but a few are unrecognizable with certainty beyond the genus. In some cases the color selections are very faulty. The detail drawings are usually insufficient, and many are poorly executed.

In order to make the present work more completely a key to the Flora de Filipinas, I give below a list of the plates of the third edition that do not pertain to species actually described by Blanco; those illustrating forms described by Blanco or by Llanos are listed in the following critical discussion of their species. For convenience the sequence follows the systematic list after the Bentham and Hooker arrangement as published by Fernandez-Villar.

LIST OF PLATES IN THE THIRD EDITION OF BLANCO'S FLORA DE FILIPINAS THAT REPRESENT SPECIES NOT DESCRIBED BY BLANCO OR BY LLANOS [11]

344 **Dillenia reifferscheidia** F.-Vill.
148 **Talauma villarii** Rolfe (*T. mutabilis* Naves, non Blume).
198 **Talauma coco** (Lour.) Merr. (*T. pumila* Blume).
193 **Phaeanthus suberosus** Hook. f. & Th. (*P. malabaricus* Naves, non Bedd.).
209 **Capparis sepiaria** Linn.
94 **Dianthus chinensis** Linn.
241 **Calophyllum soulattri** Burm. f. (*Calophyllum spectabile* Willd.) (poor).
333 **Bombycidendron vidalianum** Merr. & Rolfe (*Hibiscus vidalianus* Naves).
346 **Hibiscus syriacus** Linn. (poor).

[11] In this list the names originally assigned by Naves to the plates are utilized when they are the correct ones. In other cases, where Naves's identification was wrong or when the name used by him has been discarded for one reason or another, the correct name is given first, with Naves's original name in parenthesis.

3
140 **Sterculia stipularis** R. Br. (*S. malabonot* Naves).
448 Unrecognizable, but no *Sterculia;* the drawing is very poor and was probably based on a myristicaceous plant (*Sterculia lanceolata* Naves, non Cav.).
312 **Columbia blancoi** Rolfe (*C. floribunda* Naves, non Kurz).
425 **Muntingia calabura** Linn.
410 **Aglaia odorata** Lour.
260 **Allophylus dimorphus** Radlk. (*A. blancoi* Naves, non Blume).
160 **Crotalaria incana** Linn.
79 **Millettia merrillii** Perk. (*M. xylocarpa* Naves, non Miq.).
405 **Sesbania cannabina** Pers. (*S. aegyptiaca* Naves, non Pers.).
345 **Erythrina subumbrans** (Hassk.) Merr. (*E. lithosperma* Naves, non Blume).
319 **Canavalia microcarpa** (DC.) Merr. (*C. virosa* Naves, non W. & A.).
455 **Centrosema plumieri** Benth. (*Clitoria plumieri* Turp.).
335 **Peltophorum inerme** Naves.
451 **Delonix regia** Raf. (*Poinciana regia* Boj.).
426 **Cassia siamea** Lam. (*C. arayatensis* Naves, non Llanos).
426bis **Cassia surattensis** Burm. f. (*C. glauca* Lam.).
213 **Cynometra cauliflora** Linn.
82 **Bauhinia monandra** Kurz (*B. subrotundifolia* Naves, non Cav.).
119 **Bauhinia tomentosa** Linn. (*B. binata* Naves, non Blanco).
111 **Bauhinia acuminata** Linn. (*B. tomentosa* Naves, non Linn.).
392 **Prosopis vidaliana** Naves.
400 **Leucaena glauca** Benth.
454 **Serianthes grandiflora** Benth.
316 **Albizzia lebbeck** Benth.
309 **Samanea saman** Merr. (*Pithecolobium saman* Benth.).
136 **Bruguiera cylindrica** Blume.
200 **Terminalia pellucida** Presl, vel **T. nitens** Presl (*T. sumatrana* Naves, non Miq.).
300 **Xanthostemon verdugonianus** Naves.
172 **Psidium cujavillus** Burm. f. (*C. pumilum* Vahl).
152 **Melastoma penicillatum** Naud. (*M. malabathricum* Naves, non Linn.).
443 **Homalium panayanum** F.-Vill. (*H. grandiflorum* Naves, non Benth.).
460 **Trichosanthes cucumerina** Linn. (*T. luçioniana* Naves).
299 **Cucumis sativus** Linn.
414bis **Coccinia cordifolia** Cogn. (*C. grandis* M. Roem.).
154 **Gardenia augusta** (Linn.) Merr. (*G. florida* Linn.).
431 **Ixora chinensis** Lam. (*I. rosea* Naves, non Wall.).
22 **Ixora philippinensis** Merr. (*Ixora incarnata* Naves, non DC.).
368 **Ageratum conyzoides** Linn.
404 **Synedrella nodiflora** Gaertn.
287 **Cosmos caudatus** HBK.
298 **Plumbago auriculata** Lam. (*P. capensis* Thunb.).
166 **Ardisia serrata** Pers.
423 **Palaquium luzoniense** Vidal (*P. latifolium* Naves, non Blanco).
105 **Mimusops elengi** Linn.
283 **Tabernaemontana subglobosa** Merr. (*T. globosa* Naves, non Blanco).
428bis **Kickxia blancoi** Rolfe (*K. arborea* Naves, non Blume).

212 **Hoya imbricata** Dcne. (*Conchophyllum imbricatum* Naves, non Blume).
313 **Ceropegia cumingiana** Dcne.
28 **Heliotropium ovalifolium** Forsk. var. **depressum** Merr. (*H. coromandelium* Lehm., var. *depressum* DC.).
412 **Argyreia mollis** Choisy (*A. nitida* Choisy).
17 **Quamoclit phoenicea** Choisy (*Q. coccinea* Auct., non Moench.).
261, f. 2 **Ipomoea** sp. ? *Ipomoea paniculata* Naves, non Linn.) (very poor).
32 **Ipomoea cairica** Sweet (*Convolvulus paniculatus* Naves, non Linn.).
142 **Capsicum annuum** Linn. (*C. tetragonum* Mill.).
151 **Cestrum nocturnum** Linn.
461 **Russelia juncea** Zucc.
368bis **Lindernia viscosa** (Willd.) Merr. (*Vandellia hirsuta* Ham). (lower figure).
229 **Thunbergia grandiflora** Roxb.
427 **Vitex pubescens** Vahl.
222 **Clerodendron fragrans** Vent.
430 **Amaranthus paniculatus** Linn.
262 **Amaranthus viridis** Linn. (*Euxolus caudatus* Naves, non Miq.).
462 **Antigonon leptopus** Hook. & Arn. (*A. cordatum* Naves, non Mart.).
115 **Cinnamomum burmanni** Blume.
459 **Loranthus haenkeanus** Presl (*L. malifolius* Presl).
444 **Loranthus ampullaceus** Roxb. (*L. tomentosus* Naves, non Blanco).
317 **Muehlenbeckia platyclados** Meissn. (*Exocarpos ceramica* Naves, non DC.).
167 **Euphorbia pulcherrima** Willd. (right-hand figure).
167 **Euphorbia splendens** Boj. (left-hand figure).
353 **Cleistanthus blancoi** Rolfe (*Glutia orgyalis* Naves, non Blanco).
283 **Ficus arayatensis** Warb. (*F. microcarpa* Naves, non Linn. f.).
255 **Ficus caudatifolia** Warb. (*Ficus urophylla* Naves, nor Wall.).
464 **Alpinia speciosa** (Wendl.) K. Sch. (*A. cernua* Naves, non Sims).
442 **Costus speciosus** Sm.
429 **Dendrobium taurinum** Lindl.
465 **Vanda lamellata** Lindl.
376 **Belamcanda chinensis** Leman (*Pardanthus chinensis* Ker).
271 **Zephyranthes rosea** Lindl. (*Habranthus versicolor* Naves, non Herb.).
375 **Zephyranthes rosea** Lindl. (*Habranthus versicolor* Naves, non Herb., var. *semiplenus* Naves).
422 **Sanseviera zeylanica** Willd.
83 **Commelina nudiflora** Linn. (*Cyanotis cristata* Naves, non Schultes f.).
467 **Aneilema malabaricum** (Linn.) Merr. (*A. nudiflorum* R. Br.).
437 **Freycinetia** sp. (*F. luzonensis* Naves, non Presl, var. *heterophylla* Naves, non Miq.).
330 **Typhonium motleyanum** Schott (*T. divaricatum* Naves, non Linn.).
436 **Andropogon halepensis** Brot. var. **propinquua** Merr. (*Holcus saccharatus* Naves, non Linn.).
395 **Asplenium nidus** Linn.

THE NOVISSIMA APPENDIX

The third and last article in the fourth volume of the third edition of Blanco's Flora de Filipinas is the Novissima Ap-

pendix [12] and it is wholly the work of Father Celestino Fernandez-Villar and Father Andrés Naves, but mostly the actual work of the former. Fernandez-Villar is the author of the treatment of the dicotyledonous and gymnospermous orders, pages 1 to 212, and of the monocotyledonous orders and vascular cryptogams, from *Fimbristylis bispicata* on page 307 to the end of the work. Naves is the author of the monocotyledonous orders from page 213 to *Fimbristylis nutans* on page 307.

The date appearing on the title page is 1880, and the introduction is dated December 12, 1880. The printer's date for the last part, indicated on page 375, is June 15, 1883. From an examination of an unbound copy in which the original fascicle covers were preserved I find that pages 1 to 272 were issued in 1880; pages 273 to 336 were issued in 1882; and pages 337 to 375 were issued in 1883.[13]

As indicated in the introduction to the third edition of the Flora de Filipinas,[14] it was the intention of the authors that the fourth part of the third edition should form a new Flora de Filipinas, to include all the species described by Mercado, Blanco, and Llanos; all of those described from Philippine material by other authors; and the various undescribed species, arranged in their natural orders. The inference implied by the prospectus, issued in 1877, is that descriptions would be added, but this is not definitely stated. However, owing to various circumstances the authors were obliged to abandon their original plan in part, as indicated in the introduction to the Novissima Appendix [15] The reasons given were the enervating effect of the climate, the impatience of the majority of the subscribers for the termination of the work, the lack of special training on the part of the authors, the lack of an herbarium, and the lack of botanical publications. Further they had no means of consulting the Philippine botanical material preserved in various European and American herbaria and had not seen a single specimen of the large Cuming collection, on which up to that date most of the actual knowledge of the Philippine flora on

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[12] Naves, A. and Fernandez-Villar, C. Novissima Appendix ad Floram Philippinarum R. P. Fr. Emmanuëlis Blanco, seu enumeratio contracta plantarum philippinensium hucusque cognitarum. Cum synonymis P.P. Blanco, Llanos, Mercado et aliorum auctorum. (1880–1883) IX + I–375.

[13] Merrill, E. D. The dates of publication of the third edition of Blanco's Flora de Filipinas. *Philip. Journ. Sci.* 12 (1917) *Bot.* 113–116.

[14] 1 (1877) IX, X.

[15] Novis. App. (1880) V–IX.

the part of European authors was based. They state also that on account of local climatic conditions, ravages of insects, etc., nobody had succeeded in preserving herbarium material, that is in building up a general herbarium, and that consequently their studies had to be based largely on fresh specimens; that on their own part they preserved specimens only of plants that were secured with difficulty and that were necessary for their investigations. The Novissima Appendix then resolved itself into a merely systematic list with synonyms, with the descriptions of thirty-three species, these either proposed as new or redescriptions of species of other authors, chiefly of Blanco. Except in those cases where these new species were based on specimens in Vidal's herbarium, no material representing them is extant. Such herbarium material as was preserved by Fernandez-Villar and Naves, apparently representing but a very small percentage of the species they admitted as Philippine, was destroyed with the burning of the Guadalupe convent near Manila, February 19, 1899.[16]

In the Novissima Appendix all but about ten or twelve of Blanco's and Llanos's species were accounted for to the full satisfaction of the authors, these being reduced without question and without discussion to species of other authors. In a high percentage of cases the reductions were made to species that were originally described from extra-Philippine material, and which do not occur in the Philippines. The generic reductions for the most part are correct, but in some cases they are wrong.

The material on which the Novissima Appendix was based was not preserved, or such specimens as were preserved are no longer extant. The enumeration is trustworthy only in so far as it was based on references in botanical literature that were in turn based on actual Philippine specimens.

The Novissima Appendix is an excellent example of typographical work, and allowing for inaccuracies in the treatment of species it is excellent from a bibliographical standpoint. Beyond this nothing can be said in favor of the work, as it is utterly untrustworthy in synonymy, as to the reduction of species proposed by Blanco and by Llanos, and gives an entirely erroneous impression of the status of the knowledge of the Philippine flora at the time in which it was written. A total of 4,479 species was admitted as Philippine, distributed into

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[16] Report U. S. War Dept. 1[4] (1899) 390. Merrill, E. D. Botanical work in the Philippines. *Philip. Bur. Agr. Bull.* 4 (1903) 34.

1,223 genera and 155 families. Of these at least one family and 116 genera have no known representatives in the Archipelago; and about 1,948 species, or 44 per cent of the total, do not occur in the Philippines, or at least have not been discovered in the course of the extensive field operations that have been carried on since the year 1883. The net result of the publication of the Novissima Appendix has been the burdening of the Philippine botanical literature with the names of nearly 2,000 species that do not occur in the Archipelago and which for the most part can never be placed in the synonymy of actual Philippine species, as descriptions are lacking, and no herbarium specimens representing them are extant.

I quote here two passages from a previous consideration of this work which covers the other points at issue:[17]

> The most striking example of this phase of Philippine botany—that is, the accrediting to the Archipelago of species that do not extend to the Philippines—is that presented by the "Novissima Appendix" to the third edition of Blanco's "Flora de Filipinas," for which Fathers C. Fernandez-Villar and A. Naves are responsible. It we take into consideration the comparatively recent date at which this work was prepared (1877–83), it is difficult to explain the great mass of inaccurate data that was compiled by these authors. The errors of Blanco, working between the years 1805 and 1845, and of Llanos, working between the years 1850 and 1873, sink into insignificance when compared with those of the authors of the third edition of Blanco's work. In spite of the more recent date at which Fernandez-Villar and Naves worked, their errors are caused primarily by the same circumstances that influenced the work of Blanco and of Llanos. These causes were essentially a lack of knowledge of the Indo-Malayan flora; a lack of knowledge of the Philippine flora as a whole, due to insufficient botanical exploration; a lack of botanical material, both Philippine and extra-Philippine; a lack of botanical literature; and an inadequate conception of the principles of the geographic distribution of plants. Apparently neither author corresponded with European botanists, and they certainly sent no botanical material to Europe for identification or for comparison with types preserved in various public and private herbaria.
>
> In most cases an admitted species is followed by the indication that the authors had seen living specimens, usually with an indication of the island, province, and town in which the plant was alleged to have been seen, and frequently with the citation of native names. Some admissions are based on actual herbarium specimens from the collections of Vidal, but where these have been checked on Vidal's specimens, the identifications are usually found to be wrong. It seems to be apparent that the authors in compiling the "Novissima Appendix" took the standard books that were available to them, various monographs, Miquel's "Florae Indiae Batavae," Hooker's "Flora of British India," so far as published, and credited to the Philip-

[17] Merrill, E. D. Genera and species erroneously credited to the Philippine Flora. *Philip. Journ. Sci.* 10 (1915) *Bot.* 171–194.

pines those species they thought ought to grow in the Archipelago. In almost no case is a reduction of Blanco's species queried, nor is a specific identification qualified by the addition of a question mark.

In the Novissima Appendix numerous new combinations appear, these frequently being erroneously credited to Bentham and Hooker f. The new names are often difficult to detect, and about forty of them have not been included in Index Kewensis or its supplements to date. A list of these has been given elsewhere.[18] Naves in his treatment of the *Orchidaceae* admitted numerous *nomina nuda* from Boxall's manuscript list supplied to him by Vidal. There is no way of determining the status of these names, and accordingly the few *nomina nuda* overlooked by the compilers of Index Kewensis have been ignored by me.

The species described by Fernandez-Villar are few in number and for the most part fall as synonyms. Below is given a complete list of those described by him as his own species, as those of Vidal, or of Naves. The list includes redescriptions of Blancoan species, for which Fernandez-Villar usually proposed new specific names, and the few of other authors, such as Presl, Laguna, and Hance.

SPECIES DESCRIBED BY FERNANDEZ-VILLAR AND BY NAVES IN THE NOVISSIMA APPENDIX

Dillenia reifferscheidia F.-Vill. Novis. App. (1880) 3.

The basis of this is *Reifferscheidia speciosa* Presl Rel. Haenk. 1 (1825) 74, *t. 62*, which is also the basis of *Dillenia speciosa* Gilg, non Thunb. It is figured in the third edition of the Flora de Filipinas, *t. 354*. Fernandez-Villar's specific name is the correct one for this endemic species.

Talauma gigantifolia F.-Vill. Novis. App. (1880) 4, non Miq.

From the brief description the form Fernandez-Villar erroneously referred to Miquel's species is *Talauma angatensis* (Blanco) F.-Vill.

Monocarpia blancoi F.-Vill. Novis. App. (1880) 6.

This is nominally a new name for *Macanea arborea* Blanco and the description applies to the form Blanco described under this name. *Monocarpia blancoi* F.-Vill. is a synonym of *Alphonsea arborea* (Blanco) Merr.; see p. 146.

Pittosporum fernandezii Vidal ex F.-Vill. Novis. App. (1880) 13, Cat. Pl. Prov. Manila (1880) 17.

This is a synonym of *Pittosporum pentandrum* (Blanco) Merr.; see p. 161.

Vidalia lepidota F.-Vill. Novis. App. (1880) 18 = *Kayea paniculata* (Blanco) Merr.

The Philippine plant is not referable to *Mesua ? lepidota* T. Andr. as Fernandez-Villar supposed. A duplicate of Vidal's specimen on which Fernandez-Villar's description was based is preserved in the Kew Herba-

[18] Merrill, E. D. An Interpretation of Rumphius's Herbarium Amboinense (1917) 46–50.

rium, and it is apparently a small-leaved form of *Kayea paniculata* (Blanco) Merr.; see p. 267.

Vidalia garciae F.-Vill. Novis. App. (1880) 18=*Kayea garciae* (F.-Vill.) Vesque.

A duplicate of Vidal's specimen, on which the species was based, is preserved in the Kew Herbarium. The species is apparently a valid one.

Vidalia navesii F.-Vill. Novis. App. (1880) 18=*Kayea navesii* (F.-Vill.) Vesque.

As is the case with the two other species of *Vidalia*, described by Fernandez-Villar, a duplicate of Vidal's specimen on which this species was based, is preserved in the Kew Herbarium. It is apparently a valid species of *Kayea*.

Ternstroemia toquian (Blanco) F.-Vill. Novis. App. (1880) 19.

This is a redescription of *Llanosia toquian* Blanco, the species being certainly correctly interpreted by Fernandez-Villar; see p. 264.

Kosteletzkya batacensis (Blanco) F.-Vill. Novis. App. (1880) 24.

This is a redescription of *Hibiscus batacensis* Blanco, Blanco's species being correctly placed by Fernandez-Villar in the genus *Kosteletzkya*. Fernandez-Villar saw no specimens but interpreted the species wholly from Blanco's description; see p. 255.

Connaropsis philippica F.-Vill. Novis. App. (1880) 33.

Fernandez-Villar apparently had specimens of *Connaropsis* (*Sarcotheca*), his material being from the Island of Panay. No type specimen is extant, and no representative of the genus has appeared in our Philippine collections to date. Fernandez-Villar was certainly wrong in reducing here, as a synonym, *Averrhoa pentandra* Blanco; see p. 195. His description is the basis of *Sarcotheca philippica* (F.-Vill.) Hallier f. in Meded. Rijks Herb. 1910 (1911) 2.

Aegle decandra (Blanco) Naves; F.-Vill. Novis. App. (1880) 38; Vidal Cat. Pl. Prov. Manila (1880) 21.

This is a redescription of, and a new name for, *Feronia ternata* Blanco=*Limonia glutinosa* Blanco=*Aegle glutinosa* Merr.=*Chaetospermum glutinosum* (Blanco) Swingle; see p. 203. The species is figured in the third edition of the Flora de Filipinas, *t. 124*.

Dysoxylum salutare F.-Vill. Novis. App. (1880) 42.

This is a redescription of, and a new name for, *Turraea virens* Blanco=*Turraea decandrum* Blanco=*Dysoxylum blancoi* Vid.=*Dysoxylum decandrum* (Blanco) Merr.; see p. 209.

Allophylus cobbe Blume var. **blancoi** F.-Vill. Novis. App. (1880) 51, non *Allophylus blancoi* Blume=*Allophylus dimorphus* Radlk.

A common and well-known endemic species.

Gliricidia maculata HBK.; F.-Vill. Novis. App. (1880) 59.

Fernandez-Villar gives an ample description of this well-known introduced species. *Gliricidia maculata* HBK. is a synonym of *G. sapium* (Jacq.) Steud.; see p. 180.

Pterocarpus erinaceus F.-Vill. Novis. App. (1880) 68, non Poir.=*Pterocarpus vidalianus* Rolfe.

Fernandez-Villar gives an ample description of the form Rolfe characterized as *Pterocarpus vidalianus;* Gagnepain, Not. Syst. 2 (1913) 371, shows that the Philippine form is not the same as *P. echinatus* Pers.

Xanthostemon verdugonianus Naves; F.-Vill. Novis. App. (1880) 82.

An ample description of this endemic species is given; it is figured in the third edition of the Flora de Filipinas, *t. 300*.

Osbornia octodonta F.-Muell.; F.-Vill. Novis. App. (1880) 83.

An ample description is given of this species from Philippine specimens; it is evident that F.-Villar was correct in his identification of Philippine material with this Australian species.

Medinilla lagunae Vidal ex F.-Vill. Novis. App. (1880) 89; Cat. Pl. Prov. Manila (1880) 31 (*nomen nudum*).

This is the first publication of the species; it was later briefly described, and figured, by Vidal, Sinopsis, Atlas (1883) *t. 51, f. F.;* a duplicate of Vidal's type is preserved in the Kew Herbarium.

Homalium panayanum F.-Vill. Novis. App. (1880) 84.

This is a valid, characteristic, endemic species; it is figured in the third edition of the Flora de Filipinas as *Homalium grandiflorum* (non Benth.); see Merrill in Philip. Journ. Sci. 3 (1908) Bot. 246.

Homalium barandae Vidal; F.-Vill. Novis. App. (1880) 94; Cat. Pl. Prov. Manila (1880) 32.

This is a valid species. It was later figured by Vidal, Sinopsis, Atlas (1883) *t. 53, f. A;* see Merrill op. cit. 245.

Homalium luzoniense F.-Vill. Novis. App. (1880) 94.

This is a new name for specimens in Vidal's herbarium bearing the latter's manuscript name *Homalium aranga;* it was later figured by Vidal, Sinopsis, Atlas (1883) *t. 53 f. B.* A duplicate of Vidal's type is in the Kew Herbarium.

Dichopsis latifolia F.-Vill. Novis. App. (1880) 124.

This is a transfer of *Palaquium latifolium* Blanco, with an ample redescription of the species. It is a synonym of *Palaquium philippense* (Perr.) C. B. Rob.; see p. 300.

Dichopsis oleifera F.-Vill. Novis. App. (1880) 125.

This is a transfer of *Palaquium oleiferum* Blanco, with a brief description from a sterile specimen. I consider *Palaquium oleiferum* Blanco to be the same as *Palaquium latifolium* Blanco; see page 300.

Dichopsis luzoniensis F.-Vill. Novis. App. (1880) 125=*Palaquium luzoniense* (F.-Vill.) Vidal.

Fernandez-Villar gives an ample description of this well-known species. It is figured in the third edition of the Flora de Filipinas as *Palaquium latifolium* (non Blanco), *t. 423*.

Clerodendron blancoanum F.-Vill. Novis. App. (1880) 161.

This is a redescription of, and a new name for, *Ligustrum quadriloculare* Blanco. It is a synonym of *Clerodendron quadriloculare* (Blanco) Merr.; see p. 335.

Myristica heterophylla F.-Vill. Novis. App. (1880) 178=*Knema glomerata* (Blanco) Merr.

Fernandez-Villar gives an ample description of this common species, which is the basis of *Knema heterophylla* Warb.; see p. 151.

Quercus ovalis Blanco; F.-Vill. Novis. App. (1880) 208.

This is a redescription of Blanco's species, which was apparently correctly interpreted by Fernandez-Villar; see p. 120.

Quercus woodii Hance; F.-Vill. Novis. App. (1880) 208.

A redescription of Hance's species, the data entirely from Hance's original diagnosis.

Quercus jordanae Laguna; F.-Vill. Novis. App. (1880) 208.

A redescription of this species, the data entirely from Laguna's original diagnosis.

Quercus vidalii F.-Vill. Novis. App. (1880) 209.

This form was later figured by Vidal, Sinopsis, Atlas (1883) *t. 92 f. B*, and rightly or wrongly has been reduced by me to *Quercus jordanae* Laguna; see Philip. Journ. Sci. **3** (1908) Bot. 322. A duplicate of Vidal's specimen on which it was based is preserved in the Kew Herbarium.

Quercus caraballoana F.-Vill. Novis. App. (1880) 209.

This I have reduced to *Quercus jordanae* Laguna, which is apparently the correct disposition of it. The type collection, *Vidal*, does not appear to be extant.

Habenaria cordata Naves Novis. App. (1880) 251.

From the description and the locality cited, this is apparently a synonym of *Habenaria diphylla* Dalz.

Semecarpus gigantifolia F.-Vill. Novis. App. (1883) 350.

This was published on June 15, 1883, but was also briefly described and also figured as *Semecarpus gigantifolia* Vidal, Sinopsis, Atlas (1883) XXII, *t. 32 f. A*. There is no means of determining which author has priority. The species is a most characteristic one, now represented in various herbaria by a number of collections from various parts of Luzon.

CONTEMPORARY OPINIONS REGARDING BLANCO'S WORK AND THE EARLY ATTEMPTS TO ELUCIDATE HIS SPECIES

In the Philippines the work of Blanco was popularly supposed to be of a very high order, and locally he was ranked among the most eminent botanists of the world. The value placed on his work by the Augustinian Order, of which he was a member, was so high that in 1877–83, over thirty years after Blanco's death, a sumptuous and very expensive third edition of his Flora de Filipinas was issued, in six volumes, folio, of which four volumes are text and two volumes are plates. This edition is fully discussed elsewhere; see p. 9.

In Europe, however, Blanco's work was considered more as a curiosity than as a valuable contribution to our knowledge of systematic botany, and no botanist familiar with the work is justified in giving it high rank in comparison with similar contemporary works on other countries.

The first mention of Blanco's Flora de Filipinas of which I have any record is the rather extensive review by George Tradescant Lay,[19] who abstracts data regarding about fifteen

[19] Chinese Repository 7 (1838) 422–437.

species and gives some additional information based on his own observations.

The next review that appeared is by Lindley,[20] who gives a brief summary of the contents of the first edition, estimating the number of species described at about eleven hundred, and enumerating the new genera proposed. Regarding the work in general Lindley states: "A great proportion [of the species] are referred to Linnean plants, it is needless to say with but little probability of their belonging to them," and closes his review with this statement: "For the opportunity of examining this curious work I am indebted to the Hon. W. F. Strangways, by whom it has been presented to the library of the Horticultural Society."

In 1842 Walpers [21] published a comprehensive review of the first edition of the Flora de Filipinas, translating into Latin the descriptions of the new species proposed by Blanco. The consideration includes the first 447 species described, up to and including *Vatica mangachapoi*, page 401. About 180 descriptions were translated into Latin. No new names appear in this work other than *Bauhinia pinnata* Walp. for what should be *Bauhinia binata* Blanco. The species, with this exception, appear under the names assigned to them by Blanco. The article closes with the statement "continuabitur," but no more was printed as the "Litteratur-Bericht" was discontinued with volume 16 of Linnaea.

Doctor J. K. Hasskarl [22] in connection with his work of elucidating or interpreting the work of the pre-Linnaean authors Rumphius and Rheede, commenced the publication of a critical consideration of Blanco's species, but the work does not extend beyond a discussion of the first thirty-three species of the first edition, pages 1 to 24, as far as *Tetrandria, Monogynia*. In attempting to elucidate the first thirty-three species described by Blanco, Hasskarl proposed eleven new binomials, which, with one exception, fall as synonyms; so that it is perhaps fortunate that the work commenced by him was never completed, or at least never published. Hasskarl attempted to interpret Blanco's species from the descriptions, had little knowledge of the Philippine flora, and naturally made numerous errors in his deductions and conclusions.

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[20] Bot. Reg. 25 (1839) Miscel. 75, 76.

[21] Linnaea 16 (1842) Litt.-Bericht 1–68.

[22] M. Blanco, Flora de Filipinas, übersetzt und kritisch beleuchtet von J. K. Hasskarl. *Flora* 47 (1864) 17–23; 49–59.

The new names proposed by him are as follows:

Hellenia gracilis Hassk.=*Kolowratia elegans* Presl.
Zingiber blancoi Hassk.=*Zingiber officinale* Rosc.
Roscoea nigro-ciliata Hassk.=*Curcuma zedoaria* Rosc.
Roscoea lutea Hassk.=*Curcuma zedoaria* Rosc.
Jasminum blancoi Hassk.=*Jasminum sambac* Ait.
Jasminum aculeatum Walp.[23]
Dicliptera viridis Hassk.=*Hypoestes cinerea* C. B. Clarke.
Rostellularia blancoi Hassk.=*Rostellularia procumbens* Nees.
Didymocarpus ? blancoi Hassk.=*Ilysanthes australis* Merr.
Dopatrium aristatum Hassk.=? *Dopatrium junceum* Ham.
Bonnaya personata Hassk.=*Ilysanthes serrata* Urb.

The eminent botanist J. D. Hooker [24] characterizes Blanco's Flora de Filipinas as follows:

> The 'Flora de Filipinas' of Father Blanco, published at Manila in 1837, is a botanical curiosity, written in Spanish. The descriptions are intelligible, but, from the author's want of acquaintance with scientific works, so many well known plants are treated as new, that we consider it undesirable to devote time to their identification.

Alphonse de Candolle,[25] speaks of Blanco's work as follows:

> Il est à regretter que ces révérends ecclésiastiques [Blanco and Loureiro] et même le Pére Plumier, leur prédécesseur ne se soint pas contentés d'écrire des homélies. Bonnes on les aurait lues, mauvaises on les aurait mises de côté; tandis qu' en histoire naturelle l'existence de certains noms et de certaines planches rend nécessaire de consulter indéfiniment les plus mauvais ouvrages.

While we must agree with these authorities regarding the value of Blanco's work, yet it must be thoroughly understood that Blanco made no claim to being a botanist. He definitely states [26] that he had neither instructors nor herbaria, nor scarcely any books. On commencing his investigations his only botanical work was the Systema Vegetabilium of Linnaeus (the edition not indicated), but later he secured other works of the same author, Jussieu's Genera Plantarum, and other books. Regarding his work I translate Blanco's own statement:

> It was never my intention to frame a treatise on plants that would be worthy of publication. Mere curiosity impelled me to write what I con-

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[23] This new combination, based on *Mogorium aculeatum* Blanco, is credited by Hasskarl to Walpers in Linnaea 16 (1842) Litt.-Bericht, where it does not occur, the species being considered by Walpers as *Mogorium aculeatum* Blanco. *Jasminum aculeatum* (Blanco) Walp. is apparently a valid species.

[24] Hooker f. and Thomson T. Flora Indica 1 (1855) Introductory Essay 56.

[25] La Phytographie (1880) 141.

[26] Fl. Filip. (1837) Prologo III.

sidered interesting, but some persons who heard of my work urged me to publish it. This I have done after correcting many errors which were due to haste and want of attention when it was written. I have enlarged it as much as the circumstances in which I was placed permitted me, and, although still containing mistakes and being far from perfect, it will at least serve to give a limited knowledge of the great botanical wealth of this fertile and pleasant country, and at the same time stimulate others to proceed with the work.

Considering the circumstances under which it was written, Blanco's Flora de Filipinas even if it is a curious work is also a remarkable book in some respects. Few botanists in any country or in any time have labored under greater disadvantages, and Blanco must be credited with initiative, industry, and perseverance. Most of the facts recorded are the result of his own observation, and even if he did make numerous grave errors in interpretation of species, his descriptions, as such, on the whole compare favorably with those of his contemporaries. In fact his descriptions in general, on account of their length, are distinctly superior to the very brief diagnoses appearing in the older botanical literature as a means of interpreting the species intended. The fact should not be overlooked that species proposed by the early European authors, frequently very imperfectly characterized, are more often interpreted by an examination of the actual type specimens preserved in various public and private herbaria, than by the descriptions themselves; in fact a very high percentage of all species described are more or less unintelligible without access to the actual specimens, or duplicates of them, on which they were based. Unfortunately Blanco preserved no herbarium material, and accordingly his species must be interpreted solely by the published data.

THE WORK OF LOCAL INVESTIGATORS ON BLANCO'S FLORA DE FILIPINAS

In addition to Walpers's attempt to make Blanco's descriptions of new species more generally available by translating them into Latin, and Hasskarl's abortive attempt to interpret the species described, the interpretation of Blanco's species has been the subject of special work by Llanos, Fernandez-Villar and Naves, and myself. In addition to these special works, none of them satisfactory, species described by Blanco in various families have been generally considered, often with little success, by authors of various monographs of families, tribes, and genera in the past eighty years.

LLANOS

Llanos, who was Blanco's immediate successor and who had supplied data to Blanco in the preparation of the second edition of the Flora de Filipinas, published a series of papers between the years 1851 and 1873,[27] which are of relatively slight importance and, so far as interpretations of Blanco's species are concerned, are notoriously inaccurate. Llanos's papers are reprinted by F.-Villar and Naves in the third edition of Blanco's Flora de Filipinas,[28] the miscellaneous descriptions being included in the reprint of Llanos's "Fragmentos," with translations into Latin of all descriptions originally published by Llanos in Spanish. The second and third papers given in the footnote, are reprinted by F.-Villar and Naves under the title: "Appendix sive tentamen aliud novi supplementi ad Floram Insularum Philippinarum secundae editionis cum revisione aliquorum generum quae in ea continentur." [29]

The "Fragmentos" consists chiefly of the descriptions of new species or of species of older authors credited to the Philippines by Llanos. Nearly all of the new species proposed fall as synonyms, while most of the interpretations of the species of older authors have been shown to be erroneous. In his "Revision aliquorum generum" sixty-eight of the species characterized by Blanco in the second edition of the Flora de Filipinas

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[27] Llanos, A. Fragmentos de algunas plantas de Filipinas, no incluidas en la Flora de las islas de la 1ª. ni 2ª. edición. Dispuestas segun el sistema Linneano por el P. Fr. Antonio Llanos, Agustino Calzado (1851) 1–125.

—— Revisio aliquorum generum, quae in Flora insularum Philippinarum secundae editionis continentur. *Mem. Acad. Cienc. Madr.* III 4 (1857) 507–509.

—— Nuevo apéndice ó suplemento á la Flora de Filipinas. *Mem. Acad. Cienc. Madr.* III 4 (1857) 495–505, *plate 1.*

—— Columniferae-Sterculiae. *Bot. Zeit.* 15 (1857) 423; reprinted in *Mem. Acad. Cienc. Madr.* III 4 (1857) 501, *plate.*

—— Encinas y otros vegetales de Filipinas. *Rev. Progr. Cienc.* 15 (1865) 55.

—— Nueva especie del genero Gynocephalum, op. cit. 55.

—— Nueva Urticacea de Filipinas, op. cit. 191.

—— Sobre la Graminea llamada Dava en Filipinas, op. cit. 251.

—— Nueva descripción del Pasac (Mimusops erythroxylon Boj.), arbol de Filipinas, con la primera figura del mismo. *Anal. Soc. Esp. Hist. Nat.* 2 (1873) 255, 256, *t. 10.*

—— El Pino de los montes del Mancayan ó distrito de Lepanto en la isla de Luzon. *Nuov. Giorn. Bot. Ital.* 7 (1875) 209–207, *t. 7.*

[28] 4ª (1880) 1–108.

[29] Op. cit. 99–106.

were reduced to those described by other authors, but fifty-five of the sixty-eight reductions are erroneous. Llanos, however, realized the importance of preserving botanical material, which his predecessor, Blanco, and his immediate successors, Fernandez-Villar and Naves, failed to appreciate. He prepared and sent botanical specimens representing at least some of his species to the de Candolle Herbarium at Geneva, Switzerland, and to the Museum d'Histoire Naturelle at Paris, France, where they are still preserved. In his method of work he also showed superiority over his colleagues in the Philippines in that he corresponded with various European botanists.

FERNANDEZ-VILLAR AND NAVES

The work of Fernandez-Villar and Naves in interpreting Blanco's species is fully treated under the Novissima Appendix, page 14.

MERRILL

In organizing the botanical work for the Philippine Government in 1902 it soon became apparent that a special effort must be made to locate and to determine the status of as many of Blanco's species as possible. Preliminary work on the subject at once showed that the reductions proposed by Fernandez-Villar and Naves were very inaccurate. Accordingly, utilizing the work of Fernandez-Villar and Naves as a basis, work was commenced in 1903 in compiling data regarding Blanco's species, and this work was completed the following year and published in April, 1905.[30]

Fernandez-Villar and Naves placed to their entire satisfaction all but about ten or twelve of the species described by Blanco, but an elementary knowledge of the Philippine flora showed at once that a high percentage of their reductions was wrong, as in numerous cases Blanco's species were reduced to those of other authors that were not known to occur in the Archipelago. My work was compiled when my knowledge of the Philippine Flora was exceedingly limited, when the local herbarium, the preparation of which was commenced in 1902, contained but a few thousand specimens, and when the library facilities available in Manila were very inadequate.

The species were arranged in the Bentham and Hooker sequence of families, under each Blancoan species being given the references to the first and second editions, the native names

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[30] Merrill, E. D. A Review of the Identifications of the Species described in Blanco's Flora de Filipinas. *Govt. Lab. Publ.* [*Philip.*] 27 (1905) 1–132.

cited by Blanco, and the reduction so far as such reduction could be determined. When necessary additional data were given, such as the locality in which Blanco observed the species, the time of flowering, and other brief notes. The species of uncertain status were indicated by an asterisk, these totaling two hundred and thirty-six.

Too much dependence was placed on the generic identifications of Fernandez-Villar and Naves, which for lack of special knowledge of the problem I was obliged to accept, in whole or in part, in 1904. With a more intensive knowledge of the Philippine flora and a critical study of Blanco's descriptions it has become clear that they were totally wrong in their reductions in numerous cases.

Appended to the systematic enumeration was an index to Latin names used by Blanco in the first and second editions of the Flora de Filipinas, giving page references to my own work, to the first, second, and third editions of the Flora de Filipinas, and to the Novissima Appendix of Fernandez-Villar and Naves. A supplementary index to native names was also included for convenience in field work.

The object of this work, which succeeding events justified, was thus stated:

> The present paper has been prepared in order to summarize in convenient form our present knowledge of the species of plants described by Blanco and to call especial attention to such as are at present unknown, in order that collectors in the future may have some guide in collecting material which may serve to clear up the identity of some of his unknown species * * *. For the best interests of Philippine botany it is very essential that every effort be made to properly identify the large number of unknown species proposed by Blanco, as with so many in our flora a stable nomenclature cannot be established until the majority are properly identified.

From time to time various Blancoan species were discussed by me in miscellaneous papers on the Philippine flora, and one supplementary special paper was issued on the subject.[31] In this paper critical notes are given on forty-eight of Blanco's species that were for the most part not definitely placed in my first paper on Blanco's species.

FACTORS TO BE CONSIDERED IN INTERPRETING BLANCOAN SPECIES

In the first and second editions of his Flora de Filipinas Blanco described a total of 1,136 plants under binomial or trinomial names; the trinomials for the most part occur under

[31] Merrill, E. D. Additional identifications of the species described in Blanco's Flora de Filipinas *Philip. Journ. Sci.* 2 (1907) *Bot.* 429–436.

Oryza, all here proposed being properly reducible to *Oryza sativa* Linn., and under *Musa*, these being mostly cultural forms of *Musa sapientum* Linn. or *M. paradisiaca* Linn. Owing to changes in nomenclature in the second edition, the total number of names proposed by Blanco for his 1,136 species and varieties is about 1,386.

A critical study of Blanco's species has shown that he frequently described the same species twice, or sometimes three or even four times under different specific names, either in the same or in different genera. In about 143 cases reductions have been made in this connection, so that the total number of different species actually described by Blanco is but about 993 assuming that the fifty species, still of doubtful status, are really distinct from the forms otherwise described by Blanco.

Fernandez-Villar and Naves reduced all but about ten or twelve of Blanco's species, while in my previous consideration of the work, I indicated two hundred and thirty-six as of doubtful status. This number has now been reduced to about fifty, which for one reason or another I have been unable to interpret. In many cases these remaining doubtful species are those very briefly and imperfectly described, and there is little reason to believe that such species can be located. In other cases it is entirely probable that data and material may eventually be secured by which some of the species can be located and their status determined.

Blanco published about 686 new binomials and trinomials, of which approximately 195 supply the valid specific names for the various species under the International Code of Botanical Nomenclature. Wherever Blanco's names can be shown to be valid, they have been accepted by me, the others being reduced in the following critical enumeration.

Six hundred and ninety binomials originally proposed by other authors were assigned by Blanco to Philippine species described by him, on the assumption in each case that the Philipine plant really represented the species originally described under the same binomial. Blanco's percentage of error in interpreting species of other authors is remarkably high, which, however, was only the natural result of his methods of work. Over four hundred of these binomials, or about 60 per cent, were misapplied.

I have invariably assumed that these misinterpreted binomials are invalid, which is the only logical method of treating them. Hallier f.,[32] however, takes a different view of this matter, as

[32] Beihefte Bot. Centralbl. **34** ² (1916) 42.

indicated by his proposition to adopt *Exacum albens* Blanco (1837) non Linnaeus (1753) as the valid name for the Malayan plant commonly but erroneously referred to *Exacum tetragonum* Roxb. *Exacum albens* Linn. is the name-bringing synonym of *Sebaea albens* R. Br., and as a synonym Hallier, like many other botanists, does not recognize that it invalidates the use of the same specific name for another species of *Exacum*. If this principle be applied to all of Blanco's misinterpreted binomials, his specific names would have to be adopted in numerous cases. I hold that the publication of a binomial, whether such binomial be valid or a synonym, invalidates the future use of the same specific name for any other species under the same generic name; any other method of treating such names merely adds to the chaotic condition of binomial nomenclature.

In determining the status of Blanco's species many factors must be taken into consideration. The supplementary data given by Blanco for his various species are not infrequently of greater importance in determining his species than are the descriptions themselves. Utilizing our vast amount of accumulated data on the Philippine flora and our fairly intensive knowledge of the flora of those regions chiefly explored by Blanco, and comparing our material and data with Blanco's descriptions, it has been possible to determine with a definite degree of certainty the identity of a high percentage of his species. This even applies in those cases where his descriptions are faulty or erroneous; short and very imperfect; and where they are based on material originating from two different species or even from representatives of different genera or families. Much of the data necessary to a clear understanding of many of the species could, of necessity, be secured only by field work with special reference to the problem.

Previous attempts to determine just what Blanco intended by many of his species have in many cases proved abortive. European botanists working only with dried specimens; with no knowledge of the Philippine flora from actual field work; with few or no notes accompanying their dried specimens; with no knowledge of the local names and uses of plants, their occurrence, relative abundance, time of flowering or fruiting, and other factors, have naturally been unable in many cases properly to interpret Blancoan species, and authors of various monographs have accordingly been obliged to compile descriptions from the data given by Blanco and to treat numerous species as unknown or imperfectly known.

Local botanists up to the beginning of the present century

were handicapped by a lack of knowledge of the Philippine flora, due to insufficient exploration; by the consequent lack of herbaria; and by the lack of literature. Above all they were limited by their lack of knowledge of the Indo-Malayan flora. The work of Llanos, Fernandez-Villar, and Naves in interpreting Blancoan species is noteworthily faulty, inexact, and not to be trusted. Their knowledge of the Indo-Malayan flora was gained entirely from a study of the scanty literature that was available to them; they had no true conception of the principles of geographic distribution of plants; and they failed to realize the very high percentage of endemism that characterizes the Philippine flora. While they may have had a fairly good knowledge of Blanco's species as such, their reductions of them to Indo-Malayan species that do not extend to the Philippines are notoriously erroneous in a high percentage of cases.

While Blanco called his work a Flora of the Philippines, it is manifest that he did not intend it as a complete flora. It contains descriptions of not more than one-tenth of the species that actually occur in the Archipelago. He definitely states that he included what he considered to be of value or interest, and not infrequently discusses this or that species as being worthy of a place in his work. As noted elsewhere no exhaustive field work was undertaken, the vast areas of virgin forests were scarcely explored, and no attention was given to the rich and characteristic vegetation of the higher mountains. Large and critical families such as the *Orchidaceae*, *Gramineae*, and *Cyperaceae*, and the *Pteridophyta* were largely ignored, only a few of the more conspicuous or common species of each group or those of economic importance being described. Thus among the few grasses described we find rice, Italian millet, maize, sugar cane, sorghum, a few bamboos, and a few of the more common and conspicuous or curious non-cultivated grasses. The same is generally true of all the larger families of plants. Cultivated plants, ornamentals, and native species of economic importance were given prominence.

Blanco, having no conception of the principles of geographic distribution of plants, was influenced in his selection of generic and specific names by the limited literature at his command. He made no attempt in the first edition of his flora to account for species actually described from Philippine material by other authors, but did attempt to interpret a few such species in the second edition. Many indigenous and endemic species he identified with species of other authors, based on American material, yet on the other hand described as new various species of Amer-

ican origin that had been introduced and were cultivated or naturalized in the Philippines. Many of the forms he described as new were based on material originating in the settled areas at low altitudes, species for the most part common and of wide geographic distribution, with the result that a high percentage of his new species must be reduced as synonyms of species previously described by other authors, as in general but about 12 per cent of the species found in the settled areas at low and medium altitudes in the Philippines are endemic.

It is a well-known fact that Blanco did not permanently preserve botanical material,[33] although it seems probable that he did preserve temporarily some specimens, which in the course of time were destroyed, as their value was not realized. Most of his descriptions were based on fresh material collected by himself or brought to him by other persons; but some descriptions were based on dried specimens received from his various colleagues, notably from Azaola, and later from Llanos. From Blanco's own statement [34] it is evident that he did not accomplish any great amount of field work, at least in the sense of botanical exploration as such.

Further his botanical work was intermittent and extended over a period of many years. He definitely states [35] that on account of the great difficulty in securing material and data he at times became so discouraged that sometimes entire years passed in which he added nothing to his notes. It is then naturally to be expected, that descriptions written at long intervals would scarcely be comparative, even within the same genus, especially in view of the fact that many of them were written as he had opportunity to examine plants in the course of his travels and when he naturally did not have access to his own notes. The fact that he preserved no material for purposes of future study and comparison explains many discrepancies in his descriptions, and the reason why he often described the same species twice under different names in the same or in different genera.

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[33] Botanical material preserved in the herbarium of the Jardin Botánico, Madrid, credited to Blanco by Colmeiro [Bosquejo Hist. Jard. Bot. Madrid 88], and by A. de Candolle [La Phytographie (1880) 395] has been shown by Vidal [Rev. Pl. Vasc. Filip. (1886) 14] not to have been collected or transmitted by Blanco.

[34] Fl. Filip. (1837) 728, sub. *Quercus cerris*, translation: For those who love the study of nature it is truly lamentable that neither prayers, supplications, nor money will bring to the light of knowledge the precious things of the Philippine forests.

[35] Fl. Filip. ed. 2 (1845) Prologo III.

From his method of work errors were unavoidable. These errors consisted of faulty original observations which could not be later corrected by consultation of specimens on which the original descriptions were based; of descriptions, in some cases, of individual species based on material originating from entirely different plants, sometimes belonging in distinct families; of describing the same species twice under different genera, once from flowering specimens and once from fruiting specimens; and, from placing too much dependence on the Linnean system of classification, by describing the same species twice under different genera, in different classes, from flowering specimens. Thus *Paliurus lamio* Blanco is based on leaves and flowers of some species of *Canarium* of the *Burseraceae,* and a fruiting specimen of *Dracontomelum* of the *Anacardiaceae; Trichilia volubilis* Blanco, a species of wholly doubtful status, is apparently based on leaf specimens of some species of *Derris* of the *Leguminosae,* perhaps on the fruits of some meliaceous plant, and as to the properties and native names ascribed to it, *Albizzia saponaria* Benth.; *Cedrela taratara* Blanco is apparently based on the wood of *Pterocarpus* of the *Leguminosae,* and perhaps the leaves of some species of *Dysoxylum* or *Aglaia* of the *Meliaceae; Illigera luzonensis* (Presl) Merr. is described from flowering specimens as *Gronovia ternata* Blanco, and from fruiting specimens as *Halesia ternata* Blanco; *Alchornea sicca* (Blanco) Merr. is described both as *Excaecaria sicca* Blanco and as *Croton drupaceum* Blanco; *Sphenoclea zeylanica* Gaertn. is described both as *Pongatium spongiosum* Blanco and as *Reichelia palustris* Blanco; *Plectronia glandulosa* (Blanco) Merr. is described as *Ixora glandulosa* Blanco and again as *Polyozus bipinnatus* Blanco. There are numerous other similar cases.

In some cases species were named and described from the statements of others; that is, on hearsay evidence. Notable examples of this are *Mangifera anisodora* Blanco, which is manifestly nothing but a form of the common *Mangifera indica* Linn., and *Musa paradisiaca* var. *ulnaris* Blanco. In the case of this banana Blanco states that it was known only to the Negritos of Bataan, and that the fruits were a *braza* in length, that is about two meters, that they were as thick as the calf of one's leg, and that the raceme was reduced to a solitary fruit. In all probability this relation was based primarily on the banana locally known as *tundoc,* the largest one in the Philippines, the fruits of which are about 30 centimeters in length.

While Blanco correctly treated many of the genera proposed

by previous authors, numerous others were misinterpreted. In many cases his conception of the genus was very vague, and he often assigned to a generic name species that manifestly belong in entirely different genera or in entirely distinct families. Thus *Paederia* includes representatives of both *Paederia* and *Psychotria; Ixora* contains species of *Ixora, Scyphiphora,* and *Plectronia; Sterculia* contains species of *Sterculia, Knema,* and perhaps *Myristica; Nauclea* contains representatives of the closely allied *Nauclea* (*Sarcocephalus*) and *Neonauclea,* and also of the entirely distinct araliaceous genus *Schefflera* (§ *Cephaloscheera*); *Mimosa* includes species of *Acacia, Pithecolobium, Schrankia, Mimosa, Albizzia, Pterolobium, Adenanthera,* and *Parkia.* This list could be greatly extended, but enough is given to indicate some of the difficulties encountered in dealing with Blanco's genera.

In various descriptions Blanco has misconstrued certain characters. Thus the distichous leaves on the branchlets of certain rubiaceous and myrtaceous plants are frequently described as *pinnate* or even as *bipinnate* leaves. On the contrary he sometimes described leaflets of pinnate leaves as simple leaves. Thus it frequently happens that one must construe Blanco's descriptions rather than to take his use of technical terms as always strictly correct. In a few cases galls have been described as fruits, a notable case being that of the echinate galls of *Shorea guiso* Blume; from such material Blanco described the species as *Euphoria malaanonan* Blanco, which is considered in the second edition as "*Euphoria ? nephelium?*" He realized from his specific name *malaanonan* that he was dealing with a dipterocarpous tree; yet on account of its *Nephelium*-like "fruits" (really galls), he later placed it in the genus *Euphoria* of the *Sapindaceae.*

In numerous cases Blanco gives the exact locality in which he observed the species described. His material was for the most part from Luzon, and chiefly from the provinces near Manila. The regions from which most of his material was secured are what is now Rizal Province, especially from the vicinity of Manila, Bulacan, Pampanga, Union, Ilocos Sur, and Ilocos Norte, and a few from other provinces such as Cavite, Bataan, Cagayan, Camarines, Tayabas, etc. Few species were from other islands than Luzon, such as Mindoro, Marinduque, Cebu, Negros, and Bohol, but none were from as far south as Mindanao. Most of his material was from the easily accessible regions at low altitudes, from the settled areas in the immediate vicinity

of towns, second-growth forests and thickets, but little from the virgin forests, and none from the higher mountains. Even from medium altitudes but few species were described, the notable ones being but four, *Pinus taeda* Blanco (=*P. insularis* Endl.), *Llanosia toquian* Blanco (=*Ternstroemia toquian* F.-Vill.), *Blechnum colobrinum* Blanco (=*Oleandra neriiformis* Cav), and *Nepenthes alata* Blanco. Naturally in searching for material to elucidate or represent Blanco's species the actual field work must in large part be confined to low altitudes and to those regions from which Blanco received his material.

As Blanco frequently mentioned the exact locality in which he observed many of his species, this factor has been of especial importance in the identification of them. It has thus been possible to locate many of his species by field work in special localities. To illustrate this matter a few special cases will suffice: *Borago indica* Linn. = *Trichodesma indicum* R. Br. was correctly interpreted by Blanco in the second edition of his Flora de Filipinas. Blanco states that he observed it in peanut plantations in the town of Parañaque south of Manila. This annual weed has persisted in this locality, can now be found in practically every peanut plantation in Parañaque, but has scarcely been detected elsewhere in the Philippines. *Mimosa quadrivalvis* Linn.=*Schrankia quadrivalvis* (Linn.) Merr. was correctly interpreted by Blanco in the first edition of the Flora de Filipinas; Blanco's description applies unmistakably to this species, which was introduced from Mexico apparently at an early date. Up to the year 1907, no collector had found this species in the Philippines, and I had about concluded that it had become extinct in the Archipelago when a single fragmentary specimen was received from Mindanao. Blanco's specimens were from Mainit, Bauang, Batangas Province, Luzon, and exploration of this locality in 1915 showed that the species is now very abundant in the place where Blanco observed it some time before the year 1837. Thus *Cynanchum viminale* Blanco = *Sarcostemma brunonianum* W. & A. is still very abundant at Punta de Azufre, Batangas Province, Luzon, where Blanco observed it, but is known from but few other localities in the Philippines; and *Adelia papillaris* Blanco = *Mallotus papillaris* Merr., very inadequately described by Blanco, can still be found in thickets in the neighborhood of Guadalupe, the type locality of the species.

In other cases special species cannot now be found within many miles of the localities mentioned by Blanco in his descriptions. In the more densely populated parts of the Philippines

the vegetation has suffered enormously in the past century. In Blanco's time it is evident from his own statements that virgin forests existed in the immediate vicinity of the town of Angat, Bulacan Province, Luzon; to-day one must travel for many hours from Angat before he can find any vestiges of the virgin forest. The original vegetation has been destroyed by the primitive prevalent caiñgin system of agriculture; that is by felling and burning the trees on a selected area, abandoning this area after one or two seasons, and clearing another one. The virgin forest thus destroyed is replaced by thickets and second-growth forests in aspect and in constituent species totally different from the original vegetation; by dense bamboo thickets; or by open grasslands characterized especially by the dominance of the cogon, or lalang grass (*Imperata*).

It must be fully realized, in attempting to interpret Blanco's species, that the Philippine flora is a very complex one. While very many of Blanco's species are naturally of wide geographic distribution, others are very local. It is not sufficient to base an interpretation of many of Blanco's species on a specimen labelled "Philippines" as a high percentage of our species are strictly local, and very many are known from but a single locality. Whenever possible a Blancoan species should be interpreted by specimens originating as near as possible to the exact place indicated by Blanco, that is, by *topotypes*.

In very many cases the native names cited by Blanco and by Llanos have furnished the first clue to the identity of their species. This is especially true in those cases where the descriptions are very incomplete, and where, due to misinterpretations of genera, species were wrongly placed. From the description of *Rhamnus lando* Llanos, for example, while it is evident that it applies to no rhamnaceous plant, no botanist would ever suspect that a species of *Embelia* of the *Myrsinaceae* was intended, and I believe that it would have been impossible for any botanist properly to interpret the species except for the clue supplied by the Tagalog name *lando* cited by Llanos; material received under this name agrees perfectly with Llanos's description. Cases like this are very numerous, and it has thus been possible to secure data and material of the very greatest value in connection with this investigation by prosecuting field work in special localities with special reference to the native names of plants. Native names are naturally not always used correctly by Blanco, and in some cases we have never been able to find certain names cited by him in use; these may now be obsolete.

It is apparent that not all of the names recorded by Blanco were based on his own researches, but were copied from other authors, notably from the work of Clain.[36]

THE EXSICCATA "SPECIES BLANCOANAE"

In 1912 it occurred to me that, as Blanco preserved no botanical material, the preparation of an *exsiccata* to consist of specimens that should represent the various species described by him, as these were understood by me after long experience in the field and a critical study of each individual description, would be very desirable. It was realized that the distribution of such an *exsiccata* to the larger botanical institutions would do much to fix the status of Blanco's species, provided the work of selection was critically done. By reference to the actual specimens other botanists would be able to check my conclusions and determine individually the status and relationships of the various species, and the correctness or error in my conclusions in those cases where there is a reasonable cause for difference in opinion either in my interpretations of Blanco's species or those of other authors where reductions have been made. In other words a critically prepared *exsiccata* would supply a fairly dependable series of specimens that to a large degree would take the place of Blanco's "types" which were never preserved.

In accordance with this idea it was decided to prepare an *exsiccata* of sixteen sets, to be distributed to a selected list of botanical institutions in various countries, so that the specimens would become generally available to botanists concerned with the problems associated with the Indo-Malayan and Philippine floras, and with the preparation of monographs or revisions of various natural groups of plants. For this *exsiccata* the title "Species Blancoanae" was selected.

In assembling material for this *exsiccata*, which contains more than 16,900 specimens, the original idea was to include only those species described by Blanco as new, and those interpreted by Blanco under binomials of other authors where the actual plant described by Blanco did not pertain to the binomial under which it was placed. As the work progressed it became evident that the plan must be modified as it was discovered that in some cases Blanco's descriptions of species of older authors, where the species had been correctly interpreted by him, had been made the basis of new binomials. The plan was then changed

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[36] Clain, P. Remedios faciles para diferentes enfermedades (1712) 1–298. I have not seen the original edition of this work, but a second edition was published in Manila in 1857, pp. XXXI + 1–638, index.

to include in the *exsiccata* all species described by Blanco of which it was possible to secure specimens, whether proposed by him as new or whether correctly or incorrectly interpreted species of other authors.

Still later it became apparent that the work of Llanos on the Philippine flora was logically to be treated in the same manner as that of Blanco. Llanos was a colleague of Blanco during the latter years of this author's life, and was his immediate successor in matters pertaining to the Philippine flora. As, comparatively speaking, Llanos's work is of slight importance and scarcely worthy of separate consideration; as his species are even more obscure than are those of Blanco; and as his work is in the nature of a continuation of Blanco's labors, it was later decided further to modify the original plan by including a critical consideration of Llanos's species with those of Blanco. I have accordingly included in the *exsiccata* "Species Blancoanae" specimens representing Llanos's species where their status could be determined with reasonable certainty, and where material representing them could be secured.

The *exsiccata* "Species Blancoanae" includes 1,060 numbers, the result of several years work on this problem. When the plan of securing this material was first adopted naturally material representing several hundred of the commoner and well-known species was quickly secured. After these were collected the work progressed very slowly, and toward the last resolved itself into special trips to specific localities, often at special seasons, to secure material representing individual species. Unfortunately many of Blanco's species were unknown, and the plan has further involved a critical study of all his descriptions of species of doubtful status, their identification, and then their collection. This has involved considerable special correspondence with various officials in many parts of the Philippines, special trips of exploration, and a careful survey of special localities mentioned by Blanco.

It has not always been possible to secure the desired material, even when the exact status of a species was known. In some cases the species has not been found in flower or in fruit, and sterile material has of necessity been substituted. In other cases it has been very difficult to secure the desired material in sufficient quantity for a set of sixteen specimens. In the case of some rarely cultivated species, specimens have actually been grown from seeds or cuttings. Curiously some fairly well-known and widely distributed species have so far escaped collection in sufficient quantity for the *exsiccata*, although many have been re-

ceived in current collections during the time the *exsiccata* has been in preparation, but without a sufficient number of duplicates. Naturally it has not been possible to secure material illustrating those species described by Blanco or by Llanos whose status is now entirely uncertain or unknown, but fortunately the list of doubtful species is now very greatly reduced.

Most of the material utilized in the preparation of the *exsiccata* "Species Blancoanae" has been collected by employees of the Bureau of Science, many sets by myself, some by Eugenio Fénix, but a much larger number by Maximo Ramos. I have had the cordial coöperation of Doctor F. W. Foxworthy, of the Bureau of Forestry, and of other employees in that Bureau in securing specimens to represent special species. A few sets have kindly been supplied by Mr. C. A. Wenzel, of Jaro, Leyte; Mr. D. L. Topping and Mrs. Mary Strong Clemens, of Manila; by Doctor F. C. Gates, formerly of the College of Agriculture at Los Baños, Laguna Province; by Mr. Rafael Lete, San Fernando, Union Province; and by Father M. Vanoverbergh, of the Belgian Mission, Mountain Province, Luzon. The assistance granted by these individuals, but for which the *exsiccata* must have been much more incomplete than it is, is gratefully acknowledged.

SYSTEMATIC ENUMERATION AND DISCUSSION OF THE VARIOUS SPECIES

THALLOPHYTA

ALGAE

CHLOROPHYCEAE

ULVACEAE

ENTEROMORPHA Harvey

Ulva intestinalis Linn.; Blanco Fl. Filip. (1837) 842; ed. 2 (1845) 582; ed. 3, 3 (1879) 262=**ENTEROMORPHA INTESTINALIS** (Linn.) Link.

Blanco apparently correctly interpreted the Linnean species which is at certain seasons very abundant in tidal streams in the Philippines.

Illustrative specimen from tidal streams, Manila, Luzon, November, 1916 (*Merrill: Species Blancoanae No. 1041*).

Ulva compressa Blanco Fl. Filip. (1837) 842; ed. 2 (1845) 581; ed. 3, 3 (1879) 261=**ENTEROMORPHA PROLIFERA** J. Ag.

The description is very short and imperfect. Mr. F. S. Collins writes that he feels sure that it is this species, as represented by my number *4113*.

CODIACEAE

HALIMEDA Lamouroux

Fucus prolifer Blanco Fl. Filip. (1837) 838 (sp. nov.); ed. 2 (1845) 579; ed. 3, 3 (1879) 259=**HALIMEDA OPUNTIA** (Linn.) Lamx.

Blanco's description applies unmistakably to *Halimeda*, and the species he described is undoubtedly *Halimeda opuntia* (Linn.) Lamx.

Illustrative specimen from coral reefs, Puro, San Fernando, Union Province, Luzon, October 24, 1916 (*Merrill: Species Blancoanae No. 993*).

CHARACEAE

CHARA Linnaeus

Conferva litoralis Blanco Fl. Filip. (1837) 843; ed. 2 (1845) 582; ed. 3, 3 (1879) 263=**CHARA ZEYLANICA** Willd.

Blanco's description applies unmistakably to *Chara*, his specimens being from fresh water. The identification of *Conferva litoralis* Blanco is made largely on the basis that *Chara zeylanica*

Willd. is the only species of the genus that is common at low altitudes in central Luzon; it is very abundant in pools in and about Manila, August to December.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 180*).

Chara congesta Llanos Frag. Pl. Filip. (1851) 112; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 92, non Spreng.=**CHARA CORALLINA** Willd.

This identification follows A. Braun, who examined Llanos's specimen in the de Candolle Herbarium as reported by H. & J. Groves in Philip. Journ. Sci. 7 (1912) Bot. 69. It is suspected that a reëxamination of Llanos's specimen will show it to be a form of *Chara zeylanica* Willd.

PHAEOPHYCEAE

DICTYOTACEAE

PADINA Adanson

Ulva umbilicalis Blanco Fl. Filip. (1837) 842; ed. 2 (1845) 581; ed. 3, 3 (1879) 261=**PADINA AUSTRALIS** Hauck.

Blanco's description applies unmistakably to *Padina*, this genus being the only one known from the Archipelago that conforms at all with the characters indicated by him.

Illustrative specimen from coral reefs, Puro, San Fernando, Union Province, Luzon, October 1916 (*Merrill: Species Blancoanae No. 994*).

ENCOELIACEAE

HYDROCLATHRUS Bory

Ulva reticulata Blanco Fl. Filip. (1837) 842; ed. 2 (1845) 582; ed. 3, 3 (1879) 262, non Forsk.=**HYDROCLATHRUS CANCELLATUS** Bory.

This identification has been made by Mr. F. S. Collins. The species is represented by my numbers *6681*, *9124*, *9125*.

FUCACEAE

SARGASSUM Agardt

Fucus denticulatus Blanco Fl. Filip. (1837) 839 (sp. nov.)=**Fucus natans** Blanco op. cit. ed. 2 (1845) 579; ed. 3, 3 (1879) 259, non Linn.=**SARGASSUM** sp.

The form Blanco described is apparently the one common at certain seasons in Manila Bay. Its true position within the genus *Sargassum* has not yet been determined.

Illustrative specimen from Manila Bay, Luzon, November, 1916 (*Merrill: Species Blancoanae No. 1029*).

RHODOPHYCEAE

SPHAEROCOCCACEAE

GRACILARIA Greville

Fucus gulaman Blanco Fl. Filp. (1837) 839 (sp. nov.) = **Fucus edulis** Blanco op. cit. ed. 2 (1845) 580; ed. 3, 3 (1879) 260, non Linn. = **GRACILARIA** sp.

This alga is commonly used as food in Manila and is brought unto the markets during the rainy season by fishermen. It is a *Gracilaria*, but its position within the genus has not yet been determined, as it has not been found in fruit. Blanco probably included in his conception of the species *Gracilaria confervoides* Grev.

FUNGI

HYMENOMYCETACEAE

MARASMIUS Fries

Conferva setosa Blanco Fl. Filip. (1837) 844 (sp. nov.); ed. 2 (1845) 583; ed. 3, 3 (1879) 264 = **MARASMIUS** sp.

Blanco's description applies unmistakably to the characteristic horse-hair blight, *Marasmius*. It was observed by him attached to the leaves of trees on Mount Arayat, Pampanga Province, Luzon, and he states that he at first thought the specimens were horse hairs.

PYRENOMYCETEAE

XYLARIA Hill

Sclerotium subterraneum Blanco Fl. Filip. (1837) 845 (sp. nov.); ed. 2 (1845) 584; ed. 3, 3 (1879) 266 = **XYLARIA NIGRIPES** (Kl.) Sacc.

Blanco's description applies unmistakably to the branched conidial form of *Xylaria* that can be readily cultivated from the comb of white ant's nests, and which is apparently the conidial form of *Xylaria nigripes* Sacc. Blanco's material was secured from the nest of the *anay*, i. e., the white ant.

PTERIDOPHYTA

CYATHEACEAE

CYATHEA Smith

Trichopteris falcata Llanos Frag. Pl. Filip. (1851) 111 (sp. nov.); F.-Vill & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 91 = **CYATHEA INTEGRA** J. Sm.

Llanos's species does not appear in Christensen's Index Filicum. The description is short and rather vague, but among all the tree ferns known from the Philippines applies best to *Cyathea integra* J. Sm., the type of which was from Luzon; Llanos's specimens were from the town of Calauan, Laguna

Province, Luzon. It was reduced by Fernandez-Villar to *Alsophila crinita* Hook., a species that does not occur in the Philippines. The species is of wide distribution in the Archipelago, growing in primeval forests at medium altitudes.

Illustrative specimen from Cagayan Province, Luzon, January, 1912 (*Merrill: Species Blancoanae No. 729*).

POLYPODIACEAE

DRYOPTERIS Adanson

Pteris sinuata Blanco Fl. Filip. (1837) 830, non Thunb., nec Wall.=**Polypodium adiantiforme** Blanco op. cit. ed. 2 (1845) 573 (*adianthiforme*) (sp. nov.); ed. 3, 3 (1879) 245=**DRYOPTERIS DISSECTA** (Forst.) O. Ktze.

Blanco's species was reduced by Fernandez-Villar to *Nephrolepis davallioides* Kunze, a species that does not extend to the Philippines and one to which Blanco's description does not at all apply. The description is so very short and imperfect that it is practically impossible properly to interpret the species except by exclusion, and the present reduction is based primarily on that fern growing in the vicinity of Manila that best agrees with the description.

Illustrative specimen from Masambong, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 181*).

HEMIGRAMMA Christ

Acrostichum simplex Blanco Fl. Filip. (1837) 826; ed. 2 (1845) 571; 3, 3 (1879) 241, non Sw.=**HEMIGRAMMA LATIFOLIA** (Meyen) Copel. in Philip. Journ. Sci. 2 (1907) Bot. 406.

Synonyms of this are: *Hemionitis gymnopteroidea* Copel., *Polybotrya latifolia* Meyen, *Gymnopteris latifolia* Presl, *G. taccaefolia* J. Sm., *G. trilobata* J. Sm., *G. subquinquifida* Presl, *Dendroglossa latifolia* Fée, *D. taccaefolia* Fée, *Hemionitis zollingeri* Kurz, *Leptochilus zollingeri* Fée, *L. subquinquifidus* Fée, and *Hemigramma zollingeri* Christ. Meyen's specific name is the oldest valid one, although Blanco's description is much earlier. Blanco's *Acrostichum simplex* is not cited by Fernandez-Villar by name, but from the page citations on page 342 of the Novissima Appendix it is evident that he intended to refer it to *Acrostichum latifolium* Sw.=*Elaphoglossum latifolium* J. Sm., a species confined to tropical America. Blanco's description is very poor, and in respect to size does not apply to *Hemigramma latifolia;* "de la altura de una braza" * * * "estipites lampiños", but otherwise there are few discrepancies. I do not know any Philippine fern that agrees with Blanco's description in all respects, and consider it very probable that the description is based on

more than one species, or on detached fronds of *Hemigramma*. *Hemigramma latifolia* Copel. is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimens from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 628*); Montalban, Rizal Province, Luzon, February, 1916 (*Merrill: Species Blancoanae No. 984*).

OLEANDRA Cavanilles

Blechnum colubrinum Blanco Fl. Filip. (1837) 834 (sp. nov.); ed. 2 (1845) 576; ed. 3, 3 (1879) 252=**O. NERIIFORMIS** Cav. (*Oleandra colubrina* Copel.).

I fail to see how this species can be distinguished from *Oleandra neriiformis* Cav., the type of which was from "la insula de Mauban", i. e., Mauban, Tayabas Province, Luzon. It is widely distributed in the Philippines occurring on most mountains above an altitude of 800 meters.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 490*).

NEPHROLEPIS Schott

Pteris signata Blanco Fl. Filip. (1837) 830 (sp. nov.)=**Polypodium signatum** Blanco op. cit. ed. 2 (1845) 572 (comb. nov.); ed. 3, 3 (1879) 243=**NEPHROLEPIS BISERRATA** (Sw.) Schott.

Polypodium serratum Blanco Fl. Filip. (1837) 827; ed. 2 (1845) 572; ed. 3, 3 (1879) 243, non Willd., nec Aubl.=**NEPHROLEPIS BISERRATA** (Sw.) Schott.

Blanco's *Pteris signata=Polypodium signatum* is very imperfectly described, and the species has been considered a very doubtful one. Fernandez-Villar reduced it to *Polypodium albido-squamatum* Blume, which is a species of the mossy forests, while Blanco definitely states that his specimens were from Mandaloyan, near Manila, a region where *Polypodium albido-squamatum* does not and cannot grow. Blanco's description, so far as it goes, applies perfectly to *Nephrolepis biserrata* Schott which is abundant about Manila, many specimens of which present the white dots on the upper surface mentioned by him. Blanco's *Polypodium serratum* is certainly the same species, a form without the manifest white dots on the upper surface.

Illustrative specimen from Mandaloyon, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 153*).

ATHYRIUM Roth

Hemionitis incisa Blanco Fl. Filip. (1837) 829 (sp. nov.); ed. 2 (1845) 574; ed. 3, 3 (1879) 246=**ATHYRIUM ESCULENTUM** (Retz.) Copel. (*Diplazium esculentum* Sw., *Callipteris esculenta* J. Sm.).

This species is common and widely distributed in the Philippines along streams and is universally known as *pacó;* the tender shoots are much used as food.

Illustrative specimen from Rizal Province, Luzon, December, 1912 (*Merrill: Species Blancoanae No. 593*).

ASPLENIUM Linnaeus

Allantodia pinnata Blanco Fl. Filip. ed. 2 (1845) 571 (sp. nov.); ed. 3, 3 (1879) 242=**ASPLENIUM MACROPHYLLUM** Sw.

This species was reduced by Fernandez-Villar to *Asplenium brackenridgei* Baker, which is a synonym of *Diplazium* (*Athyrium*) *bulbiferum* Brack. Copeland in his revision of the Philippine species of *Athyrium,* Philip. Journ. Sci. 3 (1907) Bot. 297, considering that F.-Villar was correct in this reduction of *Allantodia pinnata,* has adopted Blanco's specific name, calling the species *Athyrium pinnatum* (Blanco) Copeland, and citing many synonyms. Fernandez-Villar was manifestly wrong in making this reduction for three reasons: first, Blanco's description does not apply to *Diplazium bulbiferum* Brack.; second, *Athyrium "pinnatum"* of Copeland does not grow in or near Mandaloyon; and third, there is no valid reason for considering that it ever did grow there. The species, as interpreted by Copeland, is one of the primeval forests and usually occurs at and above altitudes of 500 meters, although it has been found in Bataan Province at an altitude of about 75 meters; Mandaloyan, a suburb of Manila, is at sea level or nearly so, and Mandaloyan has certainly not supported any type of primeval forest within historical times. The only fern to be found on the entire Mandaloyan estate that at all agrees with Blanco's description is *Asplenium macrophyllum,* and this fern is abundant in some parts of the estate, and moreover is a fern to which Blanco's description certainly applies.

Illustrative specimen from Mandaloyan, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 751*).

STENOCHLAENA J. Smith

Diliman Blanco Fl. Filip. ed. 2 (1845) 573; ed. 3, 3 (1879) 245=**STENOCHLAENA PALUSTRIS** (Burm. f.) Bedd.

This fern is common at low altitudes in swamps near the sea throughout the Philippines. It is locally known as *hagnáya,* and in Manila as *dilíman.* The tough climbing stems are brought to Manila in large quantities, and on account of their durability in salt water are extensively used by the natives in tying together the parts of bamboo fish traps.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 366*).

CEROPTERIS Link

Acrostichum tripinnatum Blanco Fl. Filip. (1837) 826 (*tripinatum*) (sp. nov.); ed. 2 (1845) 571; ed. 3, 3 (1879) 241=? **CEROPTERIS CALOMELANOS** Und.

Fernandez-Villar reduced this to *Acrostichum apiifolium* Hook.=*Polybotrya apiifolia* J. Sm.=*Psomiocarpa apiifolia* Presl, to which Blanco's description does not at all apply. The description is very short and imperfect, a fern about three feet high with smooth stipes, tripinnate fronds, the pinnules very numerous, about 3 lines long, oval, tapering at the base, etc., the sori covering the entire lower surface. Blanco's specimens were from Malinta, near Manila. The only fern that conforms at all to this description that occurs anywhere within many miles of Manila, is *Ceropteris calomelanos* Und., now locally abundant in the region surrounding the City of Manila. The only objection to this reduction of *Acrostichum tripinnatum* Blanco lies in the fact that this is an introduced species in the Philippines, and there is no definite evidence that it occurred here at the time Blanco wrote his Flora de Filipinas.

Illustrative specimen from San Pedro Macati, Rizal Province, Luzon, September, 1916 (*Merrill: Species Blancoanae No. 1000*).

ONYCHIUM Kaulfuss

Caenopteris quadripinnata Blanco Fl. Filip. (1837) 833 (sp. nov.); ed. 2 (1845) 576; ed. 3, 3 (1879) 252 (*Coenopteris*)=**ONYCHIUM SILICULOSUM** (Desv.) C. Chr.

This was correctly reduced by Fernandez-Villar to *Onychium auratum* Kaulf.=*O. siliculosum* C. Chr. In describing it as "de la altura de una vara" Blanco certainly erred, as the fern never reaches this height; otherwise his description applies perfectly to *Onychium siliculosum* C. Chr. The species is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Montalban, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 748*).

ADIANTUM Linnaeus

Adiantum lyratum Blanco Fl. Filip. (1837) 832 (sp. nov.); ed. 2 (1845) 575; ed. 3, 3 (1879) 250=**ADIANTUM CAUDATUM** Linn.

There is no doubt whatever as to the identity of Blanco's species with *Adiantum caudatum* Linn., which is very common in the country about Manila. Blanco's specimens were from Mandaloyan, near Manila.

Illustrative specimen from Mandaloyan (topotype), Rizal Province, Luzon, August, 1910 (*Merrill: Species Blancoanae No. 284*).

ADIANTUM PHILIPPENSE Linn.; Blanco Fl. Filip. (1837) 831; ed 2 (1845) 575; ed. 3, 3 (1879) 249.

Adiantum tenuifolium Blanco op. cit. 832; 575; 250, non Lam., nec Sw.= **ADIANTUM PHILIPPENSE** Linn.

Blanco was correct in his interpretation of the Linnean species, and Fernandez-Villar was correct in his reduction of it to *Adiantum lunulatum* Burm. f. However, the Linnean name dates from the year 1753, while Burman's name dates from the year 1768; there is absolutely no doubt as to the correctness of the present interpretation of the Linnean species, the only Philippine fern described by Linnaeus. *Adiantum tenuifolium* Blanco is manifestly only a thin-leaved (shade) form of the common *A. philippense* Linn. The species is common and widely distributed in the Philippines.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 496*).

PTERIS Linnaeus

Adiantum lancea Blanco Fl. Filip. (1837) 833, ed. 2 (1845) 576, ed. 3, 3 (1879) 250, non Linn. nec. Bak.=**PTERIS VITTATA** Linn. (*P. longifolia* Auct., non Linn.).

Pteris trichomanoides Blanco op. cit. 830; 574; 247, non Linn.=**PTERIS VITTATA** Linn. (*P. longifolia* Auct., non Linn.).

Pteris grandifolia Blanco op. cit. 829; 574; 246, non Linn.=? **PTERIS VITTATA** Linn. (*P. longifolia* Auct., non Linn.).

Adiantum lancea Blanco was reduced by Fernandez-Villar to *Lindsaya ensifolia* Sw.=*Schizoloma ensifolium* J. Sm., a species that does not occur near Manila and one which is very rare in the Philippines. The description is very poor, but so far as it goes agrees fairly well with *Pteris vittata* Linn. which is common in and about Manila and which is widely distributed in the Philippines; Blanco's specimens were from Mandaloyan, a suburb of Manila. *Pteris trichomanoides* Blanco was reduced by F.-Villar to *Nephrolepis ramosa* Moore, but from Blanco's imperfect description it cannot possibly belong in *Nephrolepis*, but is unquestionably *Pteris vittata* Linn. *Pteris grandifolia* Blanco was reduced by F.-Villar to *P. opaca* J. Sm., which is unquestionably an erroneous disposition of it. The name *tagabas*, one of these cited by Blanco, is now used in parts of Cavite Province, Luzon, to designate a species of *Dryopteris* of the *D. parasitica* group. Blanco's short description, however, applies

better to *Pteris vittata* Linn. than to any other species known to me. This form appears in herbaria as *Pteris longifolia* Linn., but Hieronymus, Beiträge zur Kenntnis der Gattung Pteris, I. Über Pteris longifolia L. und verwandte Arten. *Hedwigia* **54** (1913) 283–294, has shown that *Pteris longifolia* Linn. is a species confined to tropical America, and that *P. vittata* Linn. is the proper name for the very common and widely distributed form in the Old World.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 167*).

Adiantum falcatum Blanco Fl. Filip. (1837) 833; ed. 2 (1845) 576; ed. 3, **3** (1879) 251, non Sw.=**PTERIS FLAVA** Goldem.

This species was reduced by Fernandez-Villar to *Lindsaya retusa* Mitt. = *Odontosoria retusa* J. Sm., a species that not only does not grow in the vicinity of Manila (Blanco's material was from Mandaloyan), but also a fern to which Blanco's description does not at all apply. The statement "Las fructificaciones en línea continua en las margines redobladas de las pinas" definitely places Blanco's plant in the genus *Pteris;* but three species of the genus grow naturally in the vicinity of Manila, and Blanco's description applies to the form distributed herewith better than to any of the others, although it does not agree in all particulars. This form has generally been determined as *Pteris quadriaurita* Retz., but Hieronymus, Hedwigia **55** (1914) 325–375, has shown that *Pteris quadriaurita* Retz. is confined to Ceylon, and considers that the "collective species" of the older authors includes numerous distinct species. The form here considered appears to be *Pteris flava* Goldem., but I cannot distinguish clearly between *P. flava* Goldem. and *P. glaucovirens* Goldem. from the data given by Hieronymus who cites *Cuming 79* under both.

Illustrative specimen from near Mandaloyan, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 182*).

DRYMOGLOSSUM Presl

Notholaena piloselloides Kaulf.; Llanos Frag. Pl. Filip. (1851) 110 (*Nothochlaena piloseloides*); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4^1(1880) 90=**DRYMOGLOSSUM HETEROPHYLLUM** (Linn.) C. Chr.

Notholaena piloselloides Kaulf. was correctly interpreted by Llanos; its proper name, however, is *Drymoglossum heterophyllum* (Linn.) C. Chr. It is widely distributed in the Philippines.

Illustrative specimen from Apayao Subprovince, Luzon, May, 1917 (*Merrill: Species Blancoanae No. 1058*).

POLYPODIUM Linnaeus

POLYPODIUM PHYMATODES Linn.; Blanco Fl. Filip. (1837) 827 (*phymatodus*); ed. 2 (1845) 572 (*phimahodes*); ed. 3, 3 (1879) 242.

The Linnean species was certainly correctly interpreted by Blanco. It is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from the Barrio of Pineda, Pasig, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 186*).

CYCLOPHORUS Desvaux

Pteris piloselloides Blanco Fl. Filip. (1837) 830; ed. 2 (1845) 574; ed. 3, 3 (1879) 248, non Linn.=**CYCLOPHORUS ADNASCENS** (Sw.) Desv.

Blanco's species was reduced by Fernandez-Villar to *Nephrolepis acuta* Presl, but there is no part of the description that applies to *Nephrolepis*. Blanco describes the fronds as alternate, lanceolate, glabrous, narrow, and much pointed, and the rhizomes as creeping, with numerous rootlets. His entire description applies unmistakably to *Cyclophorus,* although it is impossible to determine whether to *C. adnascens* or to *C. varius;* probably to the former was intended as it is the common form at low altitudes in the Philippines.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January 1915 (*Merrill: Species Blancoanae No. 790*).

DRYNARIA (Bory) J. Smith

Polypodium quercifolium Linn.; Blanco Fl. Filip. (1837) 827; ed. 2 (1845) 572; ed. 3, 3 (1879) 244=**DRYNARIA QUERCIFOLIA** (Linn.) J. Sm.

This characteristic species is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Batangas Province, Luzon, August, 1914, there known as *pacpac lauin* (*Merrill: Species Blancoanae No. 640*).

ACROSTICHUM Linnaeus

Acrostichum lagolo Blanco Fl. Filip. (1837) 826 (sp. nov.); ed. 2 (1845) 570; ed. 3, 3 (1879) 240=**ACROSTICHUM AUREUM** Linn.

This well-known species occurs along the seashore back of mangroves, along tidal streams, in salt or brackish swamps etc., throughout the Philippines; it is occasionally found inland about salt springs or mineral springs, occurring at about 1,500 meters altitude about mineral springs at Bugias, Benguet Subprovince, Luzon. *Lagolo* is one of its Tagalog names.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 382*).

PARKERIACEAE

CERATOPTERIS Brongniart

Najas ? obvoluta Blanco Fl. Filip. ed. 2 (1845) 460 (sp. nov.); ed. 3, 3 (1879) 66=**CERATOPTERIS THALICTROIDES** Brongn.

This species is widely distributed in the Philippines at low altitudes but is rare in and about Manila. The species was placed in *Najas* by Blanco with expressed doubt.

Illustrative specimen from Lamao, Bataan Province, Luzon, February, 1913 (*Merrill: Species Blancoanae No. 290*).

SCHIZAEACEAE

LYGODIUM Swartz

Ugena alba Blanco Fl. Filip. (1837) 823 (sp. nov.) ed. 2 (1845) 569; ed. 3, 3 (1879) 238=**LYGODIUM FLEXUOSUM** Sw.

Blanco's description applies better to *Lygodium flexuosum* Sw., than to *L. scandens* Sw., although Fernandez-Villar reduced *Ugena alba* to the latter species. There is very little doubt but that Blanco included in *Ugena alba* both *Lygodium flexuosum* Sw. and *L. scandens* Sw., and possibly also *L. japonicum* Sw. All three species are common and widely distributed in the Philippines.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 347*).

Ugena semihastata Cav.; Blanco Fl. Filip. (1837) 822; ed. 2 (1845) 568; ed. 3, 3 (1879) 237 p.p.=**LYGODIUM SEMIHASTATUM** (Cav.) Desv.

Blanco's description is in part that of *Lygodium semihastatum*, but this part may have been taken from Cavanilles's description. *Lygodium semihastatum* is a perfectly valid species, entirely distinct from *L. flexuosum* Sw. to which it has been reduced. For a discussion of this see below.

Illustrative specimen from Malicboi, Tayabas Province, Luzon, December, 1914, *comm. D. L. Topping* (*Merrill: Species Blancoanae No. 739*).

Ugena semihastata Cav.; Blanco Fl. Filip. (1837) 822; ed. 2 (1845) 568; ed. 3, 3 (1879) 237, p.p.=**LYGODIUM CIRCINNATUM** (Burm. f.) Sw.

Blanco manifestly included two species in his description, one the true *Ugena semihastata* Cav. = *Lygodium semihastatum* (Cav.) Desv., and the other *L. circinnatum* Sw. *Lygodium semihastatum* (Cav.) Desv. is a perfectly valid species, entirely distinct from *L. flexuosum* Sw. to which it is reduced in Christensen's Index Filicum. It is much less common in the Philippines than is *L. circinnatum* Sw. It is suspected that Blanco took the

parts of his description that apply to *L. semihastatum* from Cavanilles, and added the *circinnatum* characters from actual specimens of this species. *Lygodium circinnatum* Sw. is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 106*).

MARSILEACEAE

MARSILEA Linnaeus

Marsilea minuta Blanco Fl. Filip. (1837) 834; ed. 2 (1845) 577; ed. 3, 3 (1879) 253, non Linn.=**MARSILEA CRENATA** Presl (*M. mearnsii* Christ).

This species is widely distributed in the Philippines, growing in open wet places, rice paddies, and in shallow pools at low altitudes throughout the Archipelago; it is, however, of rather local occurrence. Fernandez-Villar considered that Blanco correctly interpreted the Linnean species, but most authorities now consider the Philippine *Marsilea crenata* Presl to be a valid species; *M. mearnsii* Christ is certainly identical with Presl's species. This is also the most likely identification of **Marsilea trifolia** Blanco Fl. Filip. (1837) 835 (sp. nov.); ed. 2 (1845) 577; ed. 3, 3 (1879) 254 which F.-Villar erroneously reduced to *Pilularia globulifera* Linn. Blanco's description is manifestly that of a *Marsilea*, and, moreover, no species of *Pilularia* is known to occur in the Philippines. It is suspected that Blanco observed an abnormal form of *Marsilea crenata*, with three, rather than four, leaflets; however, no such form appears in our collections, and many thousands of living plants examined by me in the vicinity of Manila all present four leaflets. *Marsilea trifolia* Blanco antedates *M. crenata* Presl; but as Blanco's species must be considered a doubtful one, it is believed that Presl's name should be retained.

Illustrative specimen from the Barrio of Pineda, Pasig, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 194*).

MARATTIACEAE

ANGIOPTERIS Hoffmann

Myriotheca arborescens Blanco Fl. Filip. (1837) 831 (sp. nov.); ed. 2 (1845) 575; ed. 3, 3 (1879) 248=**ANGIOPTERIS ARBORESCENS** (Blanco) comb. nov. (*Angiopteris angustifolia* Presl Suppl. (1845) 21).

Blanco's species was reduced by Fernandez-Villar to *Cyathea integra* J. Sm., due to the erroneous description of the species as having a trunk five yards high and thicker than one's arm.

This statement is an error on the part of Blanco, as he confused with his *Myriotheca arborescens* some species of *Cyathea* or *Alsophila*. His description, otherwise, is unmistakably of *Angiopteris* and Llanos had already reduced it to *Angiopteris evecta* Hoffm: "Frondes dos veces aladas. * * * Fructificaciones en muchas líneas de puntos redondos, cortas mellizas, en las margines de la fronde y perpendiculares a ellas, y se componen de muchas cagitas globosas que se abren a lo largo en la madurez." It is the common form in the provinces near Manila, a sylvan species as low and medium altitudes.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 51*).

OPHIOGLOSSACEAE

HELMINTHOSTACHYS Kaulfuss

Helminthostachys dulcis Kaulf.; Blanco Fl. Filip. ed. 2 (1845) 596; ed. 3, 3 (1879) 254=**HELMINTHOSTACHYS ZEYLANICA** (Linn.) Hook.

Kaulfuss's species was correctly interpreted by Blanco, but it is a synonym of the older *Helminthostachys zeylanica* (Linn.) Hook. It is widely distributed in the Philippines at low altitudes, in thickets, etc.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 776*).

LYCOPODIACEAE

LYCOPODIUM Linnaeus

Lycopodium dichotomum Blanco Fl. Filip. ed. 2 (1845) 570; ed. 3, 3 (1879) 240=**LYCOPODIUM CERNUUM** Linn.

This species is widely distributed in the Philippines, rare at low altitudes, but abundant at medium and higher elevations. Blanco's description is very short and imperfect, but I am now of the opinion that Fernandez-Villar was correct in reducing *L. dichotomum* Blanco to *L. cernuum* Linn.

Illustrative specimen from Laguna Province, Luzon, October, 1915 (*Merrill: Species Blancoanae No. 957*).

Lycopodium gnidioides Blanco Fl. Filip. (1837) 824; ed. 2 (1845) 569; ed. 3, 3 (1879) 239, non Linn.=**LYCOPODIUM SQUARROSUM** Forst.

Blanco's description was interpreted by Fernandez-Villar as applying to *Lycopodium selago* Linn. an impossible reduction, as the Linnean species does not occur in the Philippines. Among all the Philippine species of the genus the description applies best to *Lycopodium squarrosum* Forst., which is widely distrib-

uted in the Philippines in forests at medium altitudes. I have not the slightest hesitation in referring it to Forster's species.

Illustrative specimen from Benguet Subprovince, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1046*).

SPERMATOPHYTA

GYMNOSPERMAE

CYCADACEAE

CYCAS Linnaeus

Cycas circinalis Blanco Fl. Filip. (1837) 745; ed. 2 (1845) 513; ed. 3, 3 (1879) 146, non (?) Linn.=**CYCAS RUMPHII** Miq.

The limits of *Cycas circinalis* Linn. are doubtful, pending a critical revision of the genus. The form Blanco described is *Cycas rumphii* Miq. or *C. circinalis* Linn. *sensu latiore.* The species is locally abundant in some parts of the Philippines, presenting several distinct forms. The one distributed herewith is the more common seacoast type in the Philippines. Staminate inflorescences of what I take to be the same form are sometimes nearly a meter in length. It is commonly known in the Philippines as *olivas*, a name of Spanish origin; its Tagalog name is *pitogo;* in Cagayan Province, Luzon, it is known as *sawang;* in the Batanes Islands as *vait,* and in Mindanao and the Sulu Archipelago as *bayit.*

Illustrative specimen from cultivated plants, Manila, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 855*).

PINACEAE

AGATHIS Salisbury

Agathis loranthifolia Salisb.; Blanco Fl. Filip. ed. 2 (1845) 528; ed. 3, 3 (1879) 170=**AGATHIS ALBA** (Lam.) Foxw. in Philip. Journ. Sci. A. 5 (1910) 173; 6 (1911) Bot. 167.

The Philippine form has been described by Warburg as *Agathis philippinensis* Warb., but I agree with Foxworthy in considering that *Agathis loranthifolia* Salisb., *A. philippinensis* Warb., and the numerous other names cited by Foxworthy are properly considered merely as synonyms of *Agathis alba* (Lam.) Foxw., being essentially identical with *Dammara alba* Rumph. Herb. Amb. 2 (1841) 174, *t. 57;* see Merrill, E. D., Interpret. Herb. Amb. (1917) 76. It is a very large tree of wide distribution in the virgin forests of the Philippines at altitudes from 200 to 2,000 meters, growing on well-drained slopes. It is very generally known in the Philippines as *almaciga,* the Spanish name of the resin produced by it; *i. e.,* Manila copal of commerce.

Illustrative specimen from Mount Mariveles, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 898*).

PINUS Linnaeus

Pinus taeda Blanco Fl. Filip. (1837) 767; ed. 2 (1845) 528; ed. 3, 3 (1879) 169, *t. 453*, non Linn.=**PINUS INSULARIS** Endl.

This species is widely distributed in the mountains of northern Luzon, its altitudinal range being from about 900 to 2,800 meters. *Pinus insularis* Endl. is certainly very closely allied to the Indian *P. khasya* Royle; in fact Shaw, The genus Pinus (1914) 60, places Royle's species as a synonym of *Pinus insularis* Endl.

Illustrative specimen from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 219*).

GNETACEAE

GNETUM Linnaeus

GNETUM GNEMON Linn.; Blanco Fl. Filip. (1837) 747; ed. 2 (1845) 514; ed. 3, 3 (1879) 147.

The Linnean species was correctly interpreted by Blanco. It occurs in forests at low altitudes throughout the Philippines.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 373*).

Thoa pendula Blanco Fl. Filip. (1837) 746 (sp. nov.)=**Thoa edulis** Willd.; Blanco op. cit. ed. 2 (1845) 514; ed. 3, 3 (1879) 146=**GNETUM INDICUM** (Lour.) Merr. Interpret. Herb. Amb. (1917) 77 (*Abutua indica* Lour., *Gnetum latifolium* Blume, *G. philippinense* Warb.).

This species is common and widely distributed in the Philippines at low and medium altitudes. The nomenclatural confusion in regard to this species is very great, but I consider the Philippine form to be the same as *Abutua indica* Lour. If the Philippine form really proves to be a distinct species, then Blanco's *Thoa pendula* provides a specific name much earlier than that proposed by Warburg.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *culiat* (*Merrill: Species Blancoanae No. 249*).

ANGIOSPERMAE

MONOCOTYLEDONS

TYPHACEAE

TYPHA Linnaeus

Typha angustifolia Linn.; Blanco Fl. Filip. (1837) 687; ed. 2 (1845) 477; ed. 3. 3 (1879) 91=**TYPHA ANGUSTIFOLIA** Linn. subsp. **JAVANICA** Schnizl.

I have followed Graebner in the interpretation of this common, low altitude Philippine form, but I also suspect that it is *Typha orientalis* Presl, the type of which was Philippine, *Cuming*

1767, from the Island of Cebu. Graebner, Engl. Pflanzenreich 2 (1900) 10, does not credit *Typha orientalis* Presl to the Philippines, giving its distribution as northern China and Japan, and reducing it to *T. shuttleworthii* Koch & Sond. as a subspecies. It is widely distributed in the Philippines at low altitudes, being generally known to the Tagalogs as *balangot* and to the Visayans as *lampacanai.*

Illustrative specimen from Los Baños, Laguna Province, Luzon, June, 1914, *comm. E. Quisumbing* (*Merrill: Species Blacoanae No. 38*).

PANDANACEAE

FREYCINETIA Gaudichaud

Tillandsia pseudo-ananas Blanco Fl. Filip. (1837) 853 (sp. nov.); ed. 2 (1845) 162; ed. 3, 1 (1877) 292=**FREYCINETIA** sp.

Naves reduced this to *Freycinetia insignis* Blume, a species that does not extend to the Philippines. The description of the habit and leaves applies better to *Pandanus*, than to *Freycinetia*, but the seed characters, taken from very young fruits, indicate *Freycinetia;* it is very probable that Blanco never saw the living plant, but based his description on material brought to him. The species may even have been based on a mixture of material from two different plants. At any rate, the characters are so very imperfectly expressed that it is impossible more than to indicate its probable generic reduction.

PANDANUS Linnaeus f.

PANDANUS RADICANS Blanco Fl. Filip. (1837) 780 (sp. nov.); ed. 2 (1845) 537; ed. 3, 3 (1879) 184.

This is a valid species, and was erroneously reduced by Naves to *Pandanus bagea* Miq. Blanco's specimens were from Leyte, where it is known as *olango*. It has been rediscovered there by Mr. Elmer, the plant still being known as *olango;* see Elmer Leafl. Philip. Bot. 1 (1906) 74. The *nomen nudum, Pandanus olango* Blanco ex Espejo & Garcia Suppl. Cat. Sem. Hort. Bot. Manil. 1869 (1871) 6, (1876) 14, from its name, is the same.

PANDANUS EXALTATUS Blanco Fl. Filip. (1837) 778 (sp. nov.); ed. 2 (1845) 536; ed. 3, 3 (1879) 183.

This species was erroneously reduced by Naves to *Pandanus fascicularis* Lam., a species that does not extend to the Philippines, and one to which Blanco's description does not remotely apply. Two species are included by Blanco, if not in the description, then in the discussion following: "Es común en las playas

del mar, y en los bosques." The seacoast form is, without the slightest doubt, a form of *P. tectorius* Sol.; the forest form, true *P. exaltatus* Blanco as described by him. It has been described by me as *Pandanus arayatensis;* by Mr. Elmer as *P. banahaensis;* and by Dr. Martelli as *P. vidalii,* for I consider the type of *P. vidalii* Mart. to be only a form of *P. exaltatus* Blanco with juvenile fruits. Vidal's figure, mentioned by Martelli, is an entirely different species, and represents the common beach form of *Pandanus tectorius* Sol. that is abundant along the shores of Manila Bay. *Pandanus tectorius,* at full maturity, develops a thick, soft, fleshy, edible pulp about the lower part of each drupe, and this mature form Vidal figures; this pulp sometimes persists in the dried drupes as a zone or collar, as in the form of *P. tectorius* described by Martelli as *P. coronatus.*

Illustrative specimen from Sablan, Benguet Subprovince, Luzon, November, 1910, slightly different from the form growing in Bulacan, Rizal, Bataan, and Laguna Provinces, Luzon, Blanco's type being from the mountain back of Tala, Bulacan Province, Luzon (*Merrill: Species Blancoanae No. 421*).

Pandanus spiralis R. Br.; Blanco Fl. Filip. (1837) 777; ed. 2 (1845) 535; ed. 3, 3 (1879) 181=**PANDANUS TECTORIUS** Sol. (*P. odoratissimus* Linn. f.).

Pandanus malatensis Blanco op. cit. ed. 2 (1845) 536 (sp. nov.); ed. 3, 3 (1879) 182=**PANDANUS TECTORIUS** Sol.

This species is very abundant along the seashore throughout the Philippines, presenting but slight variation in its fruit characters so far as Philippine material is concerned. It usually forms dense thickets immediately back of the beach. As *Pandanus spiralis* R. Br. is reduced to *P. tectorius* Sol., I have assumed the Philippine plant described by Blanco to be a form of Robert Brown's species, although probably not exactly the same in all details. *Pandanus spiralis* Blanco, non R. Br., is the whole basis of *Pandanus blancoi* Kunth, which hence becomes a synonym of *Pandanus tectorius* Sol. *Pandanus malatensis* Blanco has been retained by Martelli as a distinct species, but Blanco's description is manifestly that of the staminate inflorescence of *Pandanus tectorius* Sol. Malate is a part of the City of Manila, and only cultivated pandans, such as *P. veitchii* and perhaps *P. sanderi* are now to be found in Malate. In Blanco's time, when Malate was still a village, the common seacoast pandan was undoubtedly abundant along the Malate beach, now entirely altered by streets and buildings, as it is still very abundant along the Pasay beach immediately south of Malate; *Pandanus tec-*

torius Sol. is the only species of the genus, other than the recently introduced and cultivated forms mentioned above, that is to be found within a radius of at least 25 kilometers of Manila.

Pandanus vidalii Martelli is in part *Pandanus tectorius* Sol.; that is, the figure cited by Martelli, Vidal Sinopsis, Atlas, *t. 94, f. l,* which is a poor representation of the common seacoast *Pandanus tectorius* Sol.; the specimens from which the figure was drawn were from Manila. *Pandanus coronatus* Martelli is apparently nothing but *Pandanus tectorius* Sol., at least the Philippine form of Solander's species, with fully matured fruits. At full maturity the lower two-thirds of the drupes are surrounded with a soft, fleshy, edible orange-red layer which persists on the dried drupes under certain conditions in drying. As this pulpy layer develops, the drupes become loose and soon commence to fall from the apex of the syncarp.

Illustrative specimen from Pasay beach, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 534*).

Pandanus sabotan Blanco Fl. Filip. (1837) 779 (sp. nov.); ed. 2 (1845) 537; ed. 3, 3 (1879) 184=**PANDANUS TECTORIUS** Soland., var.

The identification of this species is made chiefly from the native name, *sabotan,* this name being universally used in Laguna Province for the particular form represented by the illustrative specimens distributed herewith. Blanco described a young sterile specimen. The form apparently never produces fruits, as numerous efforts to secure fruits have proved abortive, while the natives who know the plant well, who have been questioned on the subject, state that they have never seen fruits. At the present time the form is commonly cultivated in parts of Laguna Province, the leaves being utilized in the manufacture of a rather fine grade hat known as the sabotan hat. The species was erroneously reduced by Naves to *Pandanus dubius* Spreng., a species that occurs in the southern Philippines but not in Luzon. Blanco compared the species to *Pandanus exaltatus,* and from this note and his description there is some reason for considering that the form he described is *Pandanus utilissimus* Elm., a species also cultivated in Laguna Province but one to which the name *sabotan* is apparently never applied.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914, there known as *sabotan* (*Merrill: Species Blancoanae No. 185*).

PANDANUS GRACILIS Blanco Fl. Filip. (1837) 778 (sp. nov.); ed. 2 (1845) 536; ed. 3, 3 (1879) 182, *t. 446.*

This species is a valid one, but was erroneously reduced by

Naves to *Pandanus humilis* Rumph., a species that does not extend to the Philippines. *Pandanus whitfordii* Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 8 is a synonym of *Pandanus gracilis* Blanco. It is of local occurrence in the Philippines, growing in virgin forests at medium altitudes.

Illustrative specimens from Mount Mariveles, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 896*); Mount Maquiling, Laguna, Province, Luzon, March, 1915, *comm. A. Villamil*, (*Merrill: Species Blancoanae No. 890*).

NAJADACEAE

NAJAS Linnaeus

NAJAS PALUSTRIS Blanco Fl. Filip. (1837) 660 (sp. nov.) = **Najas lobata** Blanco op. cit. ed. 2 (1845) 459 (nom. nov.); ed. 3, 3 (1879) 65.

I can see no reason for discarding this species or considering it as a doubtful one, and Blanco's first name should be retained. It manifestly belongs in the subgenus *Caulinia*, section *Euvaginatae*, and is the form described by A. Braun in 1870 as *Najas foveolata*. Rendle in his monograph of the family, Engl. Pflanzenreich 7 (1901) 18, places it among the *species dubiae vel excludendae*, with the statement: "Folia alterna, flores notabiles, fructus vesicaeformis cum genere haud congruunt." Blanco's ample description is slightly inaccurate, but certainly applies to the species as here interpreted; moreover it is the only Philippine plant known to me that at all agrees with Blanco's description, and is very common in stagnant fresh water in and about Manila. As to Dr. Rendle's objections, Blanco's description of the leaves as "alternate" was undoubtedly due to an inaccurate observation, he probably being misled by the alternate branchlets; as to "flores notables," Blanco states: "Flores * * * muy visibles," *i. e.*, readily visible, which is true, and further states that: "Los calices son delicados, blancos, y de *media línea* de largo"; and as to the "fructus vesicaeformis," Blanco states: "Cagilla o vegiga que no se abre con una especie de harina aguanosa dentro," which is an exact description, not of the fruit, but of the fresh, immature male flowers with the contained pollen grains! Blanco's species was erroneously reduced by Naves to the Australian *Najas tenuifolia* R. Br., a species that does not occur in the Philippines.

Illustrative specimen from Manila, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 519*).

ALISMACEAE

SAGITTARIA Linnaeus

Alisma sagittifolium Llanos Frag. Pl. Filip. (1851) 69 (*sagitifolium*); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 51, non Willd.= **SAGITTARIA SAGITTIFOLIA** Linn.

Llanos's specimens were from Calumpit, Bulacan Province, Luzon. His description is very imperfect, but certainly applies to *Sagittaria sagittifolia* Linn.; certainly not to *Limnophyton obtusifolium* Miq., where it was reduced by Naves. Miquel's species does not occur in the Malayan region. *Sagittaria sagittifolia* Linn. is widely distributed in the Philippines, but is of very local occurrence.

Illustrative specimen from Palapag, Samar, March 10, 1916, there known as *gauay-gauay* (*Merrill: Species Blancoanae No. 982*).

HYDROCHARITACEAE

HYDRILLA L. C. Richard

Udora verticillata Spreng.; Llanos Frag. Pl. Filip. (1851) 101; F.-Villar & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 78=**HYDRILLA VERTICILLATA** (Roxb.) Royle.

This fresh water aquatic plant is common and widely distributed in the Philippines, growing in slow streams. Sprengel's species was correctly interpreted by Llanos.

Illustrative specimen from Calumpit, Bulacan Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 666*).

VALLISNERIA Micheli

Vallisneria spiralis Blanco Fl. Filip. (1837) 781; ed. 2 (1845) 538; ed. 3, 3 (1879) 187, non ? Linn.=**VALLISNERIA GIGANTEA** Graebn. in Engl. Bot. Jahrb. 49 (1912) 68.

Although the Philippine form has recently been described by Graebner as a distinct species, *Vallisneria gigantea*, I am by no means convinced that it is specifically distinct from *V. spiralis* Linn. It is found in shallow ponds and slow streams throughout the Philippines at low altitudes and is exceedingly variable, its size depending largely, if not entirely, on the depth of the water in which it grows. The native name cited by Blanco, *cintascintasan* is from the Spanish *cintas*=ribbon, and merely means ribbon-like.

Illustrative specimen from Calumpit, Bulacan Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 667*).

ENHALUS L. C. Richard

Vallisneria sphaerocarpa Blanco Fl. Filip. (1837) 780 (sp. nov.); ed. 2 (1845) 538; ed. 3, 3 (1879) 186=**ENHALUS ACOROIDES** (Linn. f.) Rich. (*E. koenigii* Rich.).

In shallow water of sheltered bays along the seashore throughout the Philippines. Blanco's species is not listed in Index Kewensis.

Illustrative specimen from Taytay Bay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 383*).

OTTELIA Persoon

OTTELIA ALISMOIDES Pers.; Blanco Fl. Filip. (1837) 461; ed. 2 (1845) 321; ed. 3, 2 (1878) 230.

Ottelia ensiformis Blanco op. cit. 460 (sp. nov.) 320; 229=**OTTELIA ALISMOIDES** Pers.

Ottelia alismoides Pers. is exceedingly variable in vegetative characters, depending largely on the depth of the water in which the plant grows. Blanco certainly correctly interpreted the species, but I can see no valid reason for considering his *O. ensiformis* other than a habitat form of Persoon's species. It is common and widely distributed in the Philippines in stagnant pools and slow streams at low altitudes.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 92*).

GRAMINEAE

ZEA Linnaeus

ZEA MAYS Linn.; Blanco Fl. Filip. (1837) 686; ed. 2 (1845) 476; ed. 3, 3 (1879) 90, *t. 279*.

The Linnean species was correctly interpreted by Blanco. The species is cultivated throughout the Philippines, having been introduced from Mexico at an early date by the Spaniards. The common type found in the Philippines is the one distributed herewith.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 793*).

COIX Linnaeus

Coix lachryma Linn.; Blanco Fl. Filip. (1837) 688 (*C. lachrima*); ed. 2 (1845) 478; ed. 3, 3 (1879) 92, *t. 188*=**COIX LACHRYMA-JOBI** Linn.

This very characteristic species is common and widely distributed in the Philippines. It is certainly an introduced plant, but also certainly of prehistoric introduction.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 269*).

IMPERATA Cyrilli

Saccharum koenigii Retz.; Blanco Fl. Filip. (1837) 44; ed. 2 (1845) 30; ed. 3, 1 (1877) 56=**IMPERATA CYLINDRICA** Beauv. var. **KOENIGII** Benth.

In my previous paper on Blanco's species I erroneously considered Blanco's description of *Saccharum koenigii* to apply to *Saccharum spontaneum* Linn. It occurs throughout the settled areas of the Philippines, where the forests have been destroyed, practically occupying exclusively immense areas which are locally known as *cogonales*, from the almost universal Filipino name of the grass, *cogon*. Blanco's description in part, "de la altura de un hombre," applies to *Imperata exaltata* Brongn.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 381*).

SACCHARUM Linnaeus

SACCHARUM OFFICINARUM Linn.; Blanco Fl. Filip. (1837) 42; ed. 2 (1845) 29; ed. 3, 1 (1877) 55, *t. 18*.

The Linnean species was correctly interpreted by Blanco. Sugar cane is very extensively cultivated in the Philippines, is not a native of the Archipelago, but was unquestionably introduced into the Islands by the early Malayan invaders in the prehistoric period.

Illustrative specimen from San Antonio, Laguna Province, Luzon, October, 1915, from cultivated plants; local name *tubó* (*Merrill: Species Blancoanae No. 959*).

Anthistiria gigantea Blanco Fl. Filip. (1837) 49; ed. 2 (1845) 33; ed. 3, 1 (1877) 62, non Cav.=**SACCHARUM SPONTANEUM** Linn. subsp. **INDICUM** Hack.

Fernandez-Villar considered that Blanco correctly interpreted Cavanilles's species, in which opinion I concurred in my previous consideration of Blanco's species. His description, however, applies unmistakably to *Saccharum spontaneum*, which is very common and widely distributed in the Philippines and is universally known in the Tagalog provinces as *talahib*, the local name cited by Blanco.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 543*).

POGONATHERUM Beauvois

Cinna filiformis Llanos Frag. Pl. Filip. (1851) 9 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 3=**POGONATHERUM PANICEUM (Lam.) Hack.**

This species was reduced by Fernandez-Villar to *Deyeuxia quadriseta* Benth., a species of Australia and New Zealand and

one to which Llanos's description does not at all apply; moreover no species of *Deyeuxia* is known from the Philippines. The habitat given by Llanos is the typical one of *Pogonatherum paniceum*, a species that is common and widely distributed in the Philippines, while Llanos's description applies in all characters mentioned by him.

Illustrative specimen from Montalban, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 727*).

ISCHAEMUM Linnaeus

Andropogon ramosus Blanco Fl. Filip. (1837) 37; ed. 2 (1845) 25; ed. 3, 1 (1877) 48, non Forsk.=**ISCHAEMUM RUGOSUM** Salisb. var. **DISTACHYUM** (Cav.) Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 330.

This species is widely distributed in the settled areas of the Philippines, but it is of rather local occurrence although very abundant in some regions. Blanco's *Andropogon ramosus* was reduced by Fernandez-Villar to *Ischaemum ciliare* Retz., a species that does not occur in the regions from which Blanco secured his botanical material. It grows in old rice paddies, low wet lands, etc.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 165*).

ANDROPOGON Linnaeus

ANDROPOGON CONTORTUS Linn.; Blanco Fl. Filip. (1837) 38; ed. 2 (1845) 26; ed. 3, 1 (1877) 49.

The plant Blanco described is certainly a form of *Andropogon contortus* Linn. The species is very abundant locally in open grasslands at low and medium altitudes in the Philippines; it is certainly not a native of the Archipelago, but probably was introduced after the Spanish occupation.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 501*).

Andropogon anias Llanos Frag. Pl. Filip. (1851) 29 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 20=**ANDROPOGON FESTUCOIDES** Presl.

This species was retained by Fernandez-Villar in the Novissima Appendix to the third edition of Blanco's Flora de Filipinas as a distinct one. It is very closely allied to *Andropogon zizanioides* (Linn.) Urb. (*A. muricatus* Retz., *A. squarrosus* L. f.), and is apparently identical with *Andropogon nigritanus* Benth. (1849) (*A. squarrosus* var. *nigritanus* Hack.), *A. muricatus* var. *aristatus* Büse, and *Andropogon festucoides* Presl. It differs from *Andropogon zizanioides* Urb. not only in its slenderly awned perfect spikelets but also in the fact that its roots

are odorless; it is probably best, however, to consider it merely as a variety of *Andropogon zizanioides* Urban. *Merrill 4231* and *4240* from Pampanga Province, Luzon, represent *Andropogon anias* Llanos, both distributed as *A. squarrosus* Retz.

Illustrative specimen from Arayat, Pampanga Province, Luzon, November, 1914, *comm. J. Santos*, there known as *anias* (*Merrill: Species Blancoanae No. 389*).

Andropogon nardus Blanco Fl. Filip. (1837) 39; ed. 2 (1845) 27; ed. 3, 1 (1877) 51, non Linn.=**ANDROPOGON ZIZANIOIDES** (Linn.) Urban (*A. squarrosus* Linn., *A. muricatus* Retz.).

The species is common and widely distributed in the settled areas in the Philippines and is frequently planted along the banks of rice paddies. It is certainly not a native of the Philippines and has possibly been introduced since the Spanish occupation of the Archipelago, although it may have been introduced in prehistoric times.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 355*).

Rhaphis trivialis Lour.; Blanco Fl. Filip. (1837) 45=**Andropogon acicularis** Roem. & Schultes; Blanco l. c. ed. 2 (1845) 26; ed. 3, 1 (1877) 49=**ANDROPOGON ACICULATUS** Retz.

This was correctly referred to *Rhaphis trivialis* Lour., and later to *Andropogon acicularis* R. & S. by Blanco, the former being a synonym of the latter. The species is a pest in the settled areas of the Philippines on account of its barbed rachillas by which the spikelets adhere to ones clothing and to the fur of animals. It is very common and widely distributed in the Philippines but has no true native names, being known by a Spanish name, *amores secos*, or corruptions of it; this probably indicates its introduction into the Philippines after the arrival of the Spaniards, for it is certainly not indigenous to the Archipelago.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 546*).

Andropogon schoenanthus Blanco Fl. Filip. (1837) 38; ed. 2 (1845) 27; ed. 3, 1 (1877) 50, non Linn.=**ANDROPOGON CITRATUS** DC.

Fernandez-Villar considered that Blanco correctly interpreted the Linnean species, but this is certainly not correct; *Andropogon schoenanthus* Linn. does not occur in the Philippines. Blanco speaks of his *Andropogon schoenanthus* as indigenous, but this is certainly not the case. It is never found outside of cultivation, except perhaps near deserted plantations, and very

rarely produces flowers in the Philippines. Blanco speaks of having seen old flowers once; I have never seen them in fifteen years residence in the Archipelago. The fresh leaves have the strong lemon-like odor characteristic of *Andropogon citratus* DC., and chemical analysis of oil extracted from the Philippine grass is the same as that extracted from de Candolle's species. Its common Tagalog name is *tanglád.*

Illustrative specimen from Antipolo, Rizal Province, October, 1913 (*Merrill: Species Blancoanae No. 267*).

Holcus saccharatus Blanco Fl. Filip. (1837) 47; ed. 2 (1845) 32 (*saccharatus*); ed. 3, 1 (1877) 58, non Linn.=*Holcus sorghum* Linn.= **ANDROPOGON SORGHUM** Brot. var. **VULGARIS** (Pers.) Hack.

The form described by Blanco is apparently very near the typical *Holcus sorghum* Linn., which supplies the earliest valid generic and specific name; in fact *Holcus* has been recently adopted by Hitchcock as the proper generic designation of those species of *Andropogon* that were placed by Hackel in the subgenus *Sorghum.* This form is the commonest one found in cultivation in the Philippines and is in scattered cultivation throughout the Archipelago. Its generally used native name is *batád,* and the species is probably of prehistoric introduction in the Archipelago.

Illustrative specimen from Antipolo, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 654*).

PASPALUM Linnaeus

Paspalum villosum Blanco Fl. Filip. (1837) 40; ed. 2 (1845) 28; ed. 3, 1 (1877) 53, non Thunb.=**PASPALUM SCROBICULATUM** Linn.

Paspalum sumatrense Roth; Llanos Frag. Pl. Filip. (1851) 22; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 15=**PASPALUM SCROBICULATUM** Linn.

Fernandez-Villar reduced *Paspalum villosum* Blanco to *Paspalum mollicomum* Kunth.=*Panicum muticum* Forst., a species that does not extend to the Philippines. Blanco's description applies unmistakably to the common and widely distributed *Paspalum scrobiculatum* Linn. The Tagalog name *parag-is,* cited by him, is now generally applied to *Eleusine indica* Gaertn. Roth's species was apparently correctly interpreted by Llanos, while the exact form described by him is apparently the same as that described by Blanco as *Paspalum villosum.* Following the current interpretation of Philippine material it is placed under *Paspalum scrobiculatum* Linn.

Illustrative specimen from Taal Volcano, Batangas Province, Luzon, November, 1916 (*Merrill: Species Blancoanae No. 1035*).

ERIOCHLOA Kunth

Milium zonatum Llanos Frag. Pl. Filip. (1851) 24 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 16=**ERIOCHLOA RAMOSA** (Retz.) O. Ktze.

Llanos's *Milium zonatum* does not appear in Index Kewensis. It is certainly identical with *Eriochloa ramosa* which is very common and widely distributed in the Philippines at low altitudes, and with which Llanos's description agrees.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 210*).

DIGITARIA Persoon

Digitaria lanosa Llanos Frag. Pl. Filip. (1851) 28 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 19=**DIGITARIA CONSANGUINEA** Gaudich.

This species was reduced by Fernandez-Villar to *Eleusine aegyptiaca* Pers.=*Dactyloctenium aegyptium* Richt., but Llanos's description does not at all apply to that species, which he apparently described in the same work as *Eleusine mucronata.* The description is indefinite, but I can make nothing of the species but the common *Digitaria consanguinea* Gaudich., which agrees with all the characters indicated by Llanos. The species is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 787*).

Paspalum fasciculatum Llanos Frag. Pl. Filip. (1851) 23; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 16, non Willd.=**DIGITARIA LONGIFLORA** (Gmel.) Pers.

Fernandez-Villar reduced this to *Panicum elythroblepharum* Steud., a species not known from the Philippines, and one to which Llanos's description does not at all conform. From the description and indicated habitat, Llanos's plant can scarcely have been other than the widely distributed *Digitaria longiflora* Pers.

Illustrative specimen from Bukidnon Subprovince, Mindanao, July, 1916 (*Merrill: Species Blancoanae No. 1022*).

PANICUM Linnaeus

Aegilops fluviatilis Blanco Fl. Filip. (1837) 47 (sp. nov.); ed. 2 (1845) 32; ed. 3, 1 (1877) 59=**PANICUM STAGNINUM** Retz.

Orthopogon loliaceus Llanos Frag. Pl. Filip. (1851) 36; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 26, non Spreng.=**PANICUM STAGNINUM** Retz.

Blanco's species was erroneously reduced by Fernandez-Villar to *Rottboellia muricata* Retz.=*Eremochloa muricata* Hack., a

species that does not extend to the Philippines; I previously thought that it might be the same as *Manisuris exaltata* O. Ktze. =*Rottboellia exaltata* Linn. f.; see Govt. Lab. Publ. (Philip.) 27 (1905) 91. Blanco's description, however, although very imperfect, applies to *Panicum stagninum* Retz. Retzius's species is the only Philippine grass known to me to which *Aegilops fluviatilis* Blanco can be referred. It is common in low wet places, in stagnant pools, etc., about Manila. *Orthopogon loliaceus* as described by Llanos is certainly the same as Retzius's species.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 353*).

Orthopogon dichotomus Llanos Frag. Pl. Filip. (1851) 38 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 28=**PANICUM COLONUM** Linn.

This species was reduced by Fernandez-Villar to *Panicum stagninum* Retz., but Llanos otherwise described *P. stagninum* in the same publication as *Orthopogon loliaceus;* moreover his description of *Orthopogon dichotomus* certainly does not apply to *Panicum stagninum* Retz., but agrees closely with *P. colonum* Linn. It is very common and widely distributed in the Philippines, growing in the open country of the settled areas from sea level to an altitude of at least 1,600 meters.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 710*).

Orthopogon hispidus Spreng.; Llanos Frag. Pl. Filip. (1851) 37; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 27=**PANICUM CRUS GALLI** Linn.

Orthopogon subverticillatus Llanos op. cit. 38 (sp. nov.); 28=**PANICUM CRUS GALLI** Linn.

Orthopogon hispidus, as interpreted by Llanos, was reduced by Fernandez-Villar to *Panicum hispidulum* Lam., which is a synonym of *Panicum crus galli* Linn., and *O. subverticillatus* was reduced by the same author to *Panicum colonum* Linn. The reduction of the first species is certainly correct, although Llanos may not have had exactly the form described by Sprengel. The reduction of *Orthopogon subverticillatus* Llanos to *Panicum colonum* is impossible, the plant being described as being a yard and a half high. *Orthopogon subverticillatus* Llanos is certainly the form of *Panicum crus galli* Linn. with the spikes, or some of them, arranged in whorls of three's, as in the illustrative material distributed herewith. The species is common and widely distributed in the settled areas of the Philippines, growing as a weed in rice lands and along slow streams.

Illustrative specimen from the bank of an estero (stagnant stream), Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 684*).

Panicum radicans Llanos Frag. Pl. Filip. (1851) 43; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 31, non Retz.=**PANICUM DISTACHYUM** Linn.

This was reduced by Fernandez-Villar to *Panicum prostratum* Lam.=*P. reptans* Linn., but Llanos's description does not apply to that species. The description is very indefinite, but manifestly applies to some species in the group having racemosely arranged spikes and the spikelets on one side of the rachis. The description does not fit *Panicum distachyum* Linn. in all details, but better applies to this species than to any other known to me. Common and widely distributed throughout the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 711*).

Panicum crispum Llanos Frag. Pl. Filip. (1851) 42 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 30=**PANICUM PSILOPODIUM** Trin.

Fernandez-Villar reduced this to *Panicum prostratum* Lam., a species that does not at all conform with Llanos's description. The only Philippine representative of the genus known to me that conforms at all with the description and with the indicated habitat is *Panicum psilopodium* Trin., at least as that species is represented by currently identified Philippine material.

Panicum violaceum Llanos Frag. Pl. Filip. (1851) 42 (sp. nov.); F.-Vill in Blanco Fl. Filip. ed. 3, 4[1] (1880) 31=**PANICUM NODOSUM** Kunth (*P. multinode* Presl).

There is very little doubt as to the correctness of this reduction of Llanos's species, although his description is rather vague and decidedly imperfect; the reduction is in agreement with that of F.-Villar. It is common and widely distributed at low and medium altitudes in the Philippines, being especially abundant in abandoned clearings, borders of thickets, etc.

Illustrative specimen from Antipolo, Rizal Province, Luzon, August, 1915 (*Merrill: Species Blancoanae No. 944*).

Panicum polygonatum Llanos Frag. Pl. Filip. (1851) 41; Fl. Filip. ed. 3, 4[1] (1880) 30 (*poligonatum*), non Kunth, nec Schrad.=**PANICUM AMPLEXICAULE** Rudge.

Llanos's description applies unmistakably to Rudge's species and to no other known Philippine grass. It is widely distributed

in the Philippines at low altitudes, but is of local occurrence. It always grows along the margins of streams and lakes, or sometimes in shallow water. Llanos's species was erroneously reduced by Fernandez-Villar to *Panicum miliiforme* Presl which is apparently a synonym of *P. distachyum* Linn. At any rate the plant Llanos described is entirely different from Presl's species.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, September, 1915 (*Merrill: Species Blancoanae No. 967*).

Panicum tuberosum Llanos Frag. Pl. Filip. (1851) 40 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 29=**PANICUM REPENS** Linn.

Panicum tuberosum Llanos does not appear in Index Kewensis. It was reduced by Fernandez-Villar to *Panicum ischaemoides* Retz., which is generally considered to be a synonym of *Panicum repens* Linn. The description manifestly applies to *Panicum repens* Linn., which agrees with Llanos's statements as to habitat and as to root characters. It is still known in Calumpit as *luya-luya*, on account of the resemblance of its fresh rhizomes to those of ginger. It is common and widely distributed in the Philippines at low altitudes, especially near the sea.

Illustrative specimen (a topotype of *Panicum tuberosum*) from Calumpit, Bulacan Province, Luzon, January, 1915, there known as *luya-luya* (*Merrill: Species Blancoanae No. 708*).

OPLISMENUS Beauvois

Orthopogon setarius ? Llanos Frag. Pl. Filip. (1851) 35; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 25, non Spreng.=**OPLISMENUS COMPOSITUS (L.) Beauv.**

Orthopogon hirtellus R. Br.; Llanos Frag. Pl. Filip. (1851) 37; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880 26=**OPLISMENUS COMPOSITUS (L.) Beauv.**

F.-Villar reduced *Orthopogon setarius* Llanos to *Oplismenus burmannii* Beauv., but the description applies rather better to the much commoner *O. compositus* Beauv., where I think it should be placed. Llanos was correct in his interpretation of *Orthopogon hirtellus* R. Br., which is, however, a synonym of *Oplismenus compositus* Beauv. It was reduced by Fernandez-Villar to *Panicum lanceolatum* Retz., which is also a synonym of *Oplismenus compositus* Beauv. It is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 204*).

SETARIA Beauvois

Setaria pilifera Llanos Frag. Pl. Filip. (1851) 34; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 25, non Desv., nec Spreng.=**SETARIA FLAVA** (Nees) Kunth.

This species was reduced by Fernandez-Villar to *Panicum helopus* Trin.=*Panicum setigerum* Retz., *fide* Hooker f., a species that does not extend to the Philippines and to which Llanos's description does not apply. The description does not entirely apply to *Setaria flava* Kunth, but I know of no other Philippine grass that at all agrees with Llanos's description. The species is common and widely distributed in the Philippines.

Illustrative specimen from Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 766*).

Panicum miliaceum Blanco Fl. Filip. (1837) 39; ed. 2 (1845) 28; ed. 3, 1 (1877) 52, non Linn.=**SETARIA ITALICA** (Linn.) Beauv.

This species, known in the Philippines as *dava* or *dawa*, is probably of prehistoric introduction. It is fairly common in cultivation, but is usually grown on a very small scale.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 484*).

CENCHRUS Linnaeus

Cenchrus hexaflorus Blanco Fl. Filip. (1837) 36 (sp. nov.); ed. 2 (1845) 24; ed. 3, 1 (1877) 46=**CENCHRUS ECHINATUS** Linn.

This species was reduced by Fernandez-Villar to *Pennisetum nigricans* (Presl) Miq.=*Pennisetum compressum* R. Br., while in my previous consideration of Blanco's species I considered it as certainly the same as *Pennisetum macrostachyum* Trin., chiefly on account of the known distribution of the two species of *Pennisetum* in the Philippines. However, Blanco's description does not at all apply to *Pennisetum*, but manifestly does apply to *Cenchrus echinatus* Linn., a species of wide distribution and abundant in and about towns in the Philippines. The statement "Los involucros son membranaceos, y muy tiesos, y doblándose algunos hacia dentro, forman una cosa algo semejante a los abrojes" (abrojes=caltrop) leaves absolutely no doubt as to the species intended, yet it is difficult to conceive just why Blanco described the involucres as membranaceous and at the same time as very hard or solid. The species was certainly introduced into the Philippines from Mexico.

Illustrative specimen from Manila, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 811*).

SPINIFEX Linnaeus

Stipa spinifex Linn.; Blanco Fl. Filip. (1837) 41; ed. 2 (1845) 29; ed. 3, 1 (1877) 54=**SPINIFEX LITTOREUS** (Burm. f.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 229.

The Linnean species, pistillate plant, was correctly interpreted by Blanco. The earliest valid specific name, under the International Code of Botanical Nomenclature is that supplied by *Stipa littorea* Burm. f. (1768); *Stipa spinifex* Linn. dates from 1767; while *Spinifex squarrosus* Linn. dates from 1771. Along sandy shores throughout the Philippines.

Illustrative specimen from Parañaque, Rizal Province, Luzon, January, 1915, *comm. Mrs. Clemens* (*Merrill: Species Blancoanae No. 768*).

Spinifex squarrosus Linn.; Blanco Fl. Filip. (1837) 46; ed. 2 (1845) 31; ed. 3, 1 (1877) 57=**SPINIFEX LITTOREUS** (Burm. f.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 229.

The Linnean species, staminate plant, was correctly interpreted by Blanco. It is common along sandy shores throughout the Philippines.

Illustrative specimen from Parañaque, Rizal Province, Luzon, January, 1915, *comm. Mrs. Clemens* (*Merrill: Species Blancoanae No. 764*).

ORYZA Linnaeus

Oryza sativa praecox Blanco Fl. Filip. (1837) 274 (var. nov.); ed. 2 (1845) 190; ed. 3, 1 (1877) 340=**ORYZA SATIVA** Linn.

This is one of the cultivated varieties of rice, still commonly known to the Tagalogs as *dumali*. It is an upland rice, grown on recently cleared slopes, not in paddies. It was reduced by F.-Villar to *Oryza praecox* Lour.

Illustrative specimen from Balayan, Batangas Province, Luzon, August 1914 (*Merrill: Species Blancoanae No. 489*).

Oryza sativa pilosa Blanco Fl. Filip. (1837) 275 (var. nov.); ed. 2 (1845) 191; ed. 3, 1 (1877) 341=**ORYZA SATIVA** Linn.

This variety was referred by F.-Villar to *Oryza latifolia* Desv., but is manifestly only one of the numerous forms of *Oryza sativa* Linn. Blanco's variety is characterized by the prominently pubescent glumes. The form is one of the upland rices, grown on recently cleared slopes, not in regular paddies.

Illustrative specimens from Batangas Province, Luzon, there known as *bolohan*, the same native name as Blanco cites (*Merrill: Species Blancoanae Nos. 477, 1013*).

Oryza sativa quinanda Blanco Fl. Filip. (1837) 274 (var. nov.); ed. 2 (1845) 191; ed. 3, 1 (1877) 340, *t. 102*, right hand figure=**ORYZA SATIVA** Linn.

This is merely one of the numerous cultural forms of the common rice plant; the natives of Batangas distinguish two forms under the name *quinanda, quinanda puti* (i. e. white) and *quinanda pula* (i. e. red).

Illustrative specimens from Batangas Province, Luzon, October 21, 1916 (*Merrill: Species Blancoanae No. 1015, quinanda puti; No. 1017, quinanda pula*).

Oryza sativa glutinosa Blanco Fl. Filip. (1837) 273 (var. nov.); ed. 2 (1845) 190; ed. 3, 1 (1877) 339, *t. 102*, middle figure=**ORYZA SATIVA** Linn.

A form with glutinous grains, when cooked.

Illustrative specimen from Batangas Province, Luzon, October 21, 1916 (*Merrill: Species Blancoanae No. 1037*) locally known as *malagkit*.

Oryza aristata Blanco Fl. Filip. (1837) 274 (var. nov.); ed. 2 (1845) 190; ed. 3, 1 (1877) 339=**ORYZA SATIVA** Linn.

This is perhaps the most characteristic of all the varieties of the rice plant described by Blanco; it is distinguished by its long awns. It is commonly cultivated by the Ilocanos in northern Luzon.

Illustrative specimen from Bauang, Union Province, Luzon, there known as *saigurot*, October 23, 1916 (*Merrill: Species Blancoanae No. 992*).

The remaining forms of rice, characterized and named by Blanco, are all cultural forms or varieties of *Oryza sativa* Linn. and should be reduced here. F.-Villar has attempted to interpret them some as forms of *Oryza sativa* Linn., others as representing *Oryza latifolia* Desv., *O. praecox* Lour., and *O. glutinosa* Lour. The last two, as described by Loureiro, are certainly nothing but forms of *Oryza sativa* Linn., while *Oryza latifolia* Desv. is a species of tropical America, totally different from any of the Indo-Malayan forms of *Oryza*. The forms indicated by Blanco, other than those listed above, are:

Oryza sativa binamban Blanco (var. nov.) Fl. Filip. (1837) 273; ed. 2 (1845) 189 (*binambang*); ed. 3, 1 (1877) 338, *t. 102*, left hand figure.
Oryza sativa lamuyo Blanco op. cit. 273 (var. nov.); 190; 339.
Oryza sativa rubra Blanco op. cit. 275 (var. nov.); 191; 341.
Oryza sativa violacea Blanco op. cit. 275 (var. nov.); 191; 343.

LEERSIA Swartz

LEERSIA HEXANDRA Sw.; Llanos Frag. Pl. Filip. (1851) 26; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 18.

This species was correctly interpreted by Llanos. It is widely distributed in the Philippines, growing in open muddy places and in shallow water. In and about Manila it is extensively cultivated for green forage and is the chief source of forage supply for the City of Manila. The land is prepared in the form of paddies, as for the cultivation of rice. There are many hundred hectares of land in and near Manila devoted to the cultivation of this grass. It is universally known as *barit* or *zacáte*.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 749*).

SPOROBOLUS R. Brown

Spermachiton involutum Llanos Frag. Pl. Filip. (1851) 25 (gen. et sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 17= **SPOROBOLUS INDICUS** (L.) R. Br.

This genus and species was reduced by Fernandez-Villar to *Eriochloa punctata* Ham.=*E. ramosa* O. Ktze., a species to which Llanos's description does not apply, and which Llanos certainly describes, op. cit. 24; 16, as *Milium zonatum*. While the description is very imperfect and indefinite, I consider that the statements "semilla vestido con un saquito," in the generic description, and "semilla * * * cubierta con un saquito," in the species description, very definitely refer the plant to *Sporobolus*. The description in all essentials applies to *Sporobolus indicus*, a species that is common and widely distributed in the settled areas of the Philippines.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 845*).

CYNODON Persoon

Chloris rufescens Llanos Frag. Pl. Filip. (1851) 31; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3. 4[1] (1880) 21, non ? Lag.=**CYNODON DACTYLON** (Linn.) Pers.

This was reduced by Fernandez-Villar, with doubt, to *Cynodon dactylon*, but the reduction is unmistakably correct. Llanos does not indicate whether or not he considered his *Chloris rufescens* as a new species, and adds no literature reference. The description applies perfectly to the very common *Cynodon dactylon* which is commonly known in the Philippines as *grama*, a name

cited by Llanos, and it is extensively gathered by the Filipinos for feeding horses and other stock.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 104*).

CHLORIS Swartz

Chloris inflata Llanos Frag. Pl. Filip. (1851) 31; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 22, non ? Link=**CHLORIS BARBATA** Sw.

This was reduced by Fernandez-Villar to *Chloris truncata* R. Br., a species that is unknown from the Philippines. *Chloris barbata* Sw. is the only species of the genus found in or near Manila, is common and widely distributed in the settled areas of the Philippines at low altitudes, and Llanos's description agrees with it in all respects.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 211*).

ELEUSINE Gaertner

ELEUSINE INDICA Gaertn.; Llanos Frag. Pl. Filip. (1851) 45; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 33.

Eleusine indica (Linn.) Gaertn. was correctly interpreted by Llanos. It is very common and widely distributed throughout the settled areas of the Philippines.

Illustrative specimen from Batangas Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 735*).

DACTYLOCTENIUM Willdenow

Eleusine mucronata Llanos Frag. Pl. Filip. (1851) 46; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 34, non Spreng., nec Michx.=**DACTYLOCTENIUM AEGYPTIUM** (Linn.) Richt.

Llanos's *Eleusine mucronata*, which he intended to represent Sprengel's species of the same name, was reduced by Fernandez-Villar to *Chloris barbata* Sw., a species with which the description does not agree. I consider it to represent *Dactyloctenium aegyptium* which is very common and widely distributed in the settled areas of the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 212*).

PHRAGMITES Trinius

Arundo tecta Blanco Fl. Filip. (1837) 48; ed. 2 (1845) 33; ed. 3, 1 (1877) 60, non Walt.=**PHRAGMITES VULGARIS** (Lam.) Trin. (*P. communis* Trin.).

The species is common in low swampy places, along the margins of stagnant pools and streams, etc. Its common Tagalog name is *tambó*. It is especially abundant, forming dense thickets,

about the source of the Pasig River which drains Lake Bay, near Manila.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 319*).

ERAGROSTIS Host

Cyperus paniculatus Blanco Fl. Filip. (1837) 32; ed. 2 (1845) 22; ed. 3, 1 (1877) 42, non aliorum=**ERAGROSTIS VISCOSA** (Retz.) Trin.

This species is common and widely distributed in the Philippines in the settled areas at low altitudes, especially in waste places in and about towns; it is certainly an introduced plant in the Philippines.

Illustrative specimen from Manila, December, 1913 (*Merrill: Species Blancoanae No. 229*).

Poa japonica Thunb.; Llanos Frag. Pl. Filip. (1851) 47; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 34=**ERAGROSTIS JAPONICA** (Thunb.) Trin., forma.

The proper specific name for this species is obscure, but if it be interpreted in the sense of Stapf in Hook. f. Fl. Brit. Ind. 7 (1897) 317, then *Eragrostis japonica* Trin. is the correct name, *sensu latiore;* Thunberg's name, *Poa japonica,* dates from 1784. The species is very generally named *Eragrostis interrupta* Beauv., but this was not based on *Poa interrupta* Lam (1791), but on *Poa interrupta* R. Br. Prodr. (1810) 180; see Beauv. Agrost. (1812) 175 (in index sub *Poa*). *Poa interrupta* R. Br. is, according to Bentham, a variety of *Eragrostis brownei* Nees, or according to Hackel a synonym of *Eragrostis elongata* Jacq. The name *Eragrostis interrupta* (Lam.) Doell. is untenable for the species. The plant that Llanos described is the form that is generally called *Eragrostis interrupta* Beauv.; it is widely distributed in the Philippines at low and medium altitudes, growing in low wet lands, along streams, ditches, etc.

Illustrative specimen from Calumpit, Bulacan Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 709*).

Poa annua Llanos Frag. Pl. Filip. (1851) 47; F.-Villar & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 34, non Linn=**ERAGROSTIS** sp. (probably).

This was considered by Fernandez-Villar to be *Poa annua* Linn. but *Poa annua* occurs in the Philippines only as a recently introduced plant and at altitudes of 1,300 meters and above. Llanos gives no description, but rather naïvely remarks: "No he tenido tiempo de describir esta planta, pero caso no dudo sea este genero y especie." He adds that it grows in irrigated lands. It is certainly no *Poa,* and if an *Eragrostis* then probably *E.*

unioloides Nees, the only Philippine species of the genus agreeing as to habitat.

Uniola spicata Llanos Frag. Pl. Filip. (1851) 33; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 23, non Linn.=**ERAGROSTIS SPARTINOIDES** Steud.

Llanos's *Uniola spicata* was reduced by Fernandez-Villar to *Eragrostis cumingii* Steud. The description, however, applies very closely to *Eragrostis spartinoides* Steud., which is abundant locally about Manila and is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae Nos. 170, 422*).

Uniola paniculata Llanos Frag. Pl. Filip. (1851) 32; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 23, non Linn.=**ERAGROSTIS DISTANS** Hack.

Llanos's interpretation of *Uniola paniculata* was reduced by Fernandez-Villar to *Eragrostis pilosa* Beauv., a species to which Llanos's description does not particularly apply and moreover one that apparently did not occur in the Philippines until its accidental introduction into Manila sometime after the year 1905. At the present time (1917) *Eragrostis pilosa* is definitely known in the Philippines only from few localities in the City of Manila.

CENTOTHECA Desvaux

Melica philippensis Llanos Frag. Pl. Filip. (1851) 44 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 32=**CENTOTHECA LATIFOLIA** (Osbeck) Trin. (*C. lappacea* Desv.).

This species is very common and widely distributed in the Philippines, and there is no doubt as to the correctness of this reduction of *Melica philippensis* Llanos. *Centotheca malabarica* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 385, based on *Poa malabarica* Linn. (1753) is untenable, as *Poa malabarica* is a *Panicum*. The Linnean *Poa malabarica* is erroneously cited by Hooker f. Fl. Brit. Ind. 7: 332, as a synonym of *Centotheca lappacea*, this being the source of my error in taking up the specific name *malabarica* under *Centotheca;* see Merrill in Philip. Journ. Sci. 4 (1910) Bot. 248, where *Poa malabarica* Linn. is transferred to *Panicum* as *P. malabaricum* (Linn.) Merr., the oldest specific name for the plant later described as *Panicum arnottianum* Nees.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 206*).

BAMBUSA Schreber(*)

Bambus pungens Blanco Fl. Filip. (1837) 270 (sp. nov.) = **Bambus arundo** Blanco op. cit. ed. 2 (1845) 188; ed. 3, 1 (1877) 335, *t. 100*, non Nees, nec Wight = **BAMBUSA SPINOSA** Roxb. (*Bambusa blumeana* Schultes f.).

This species is found throughout the Philippines at low and and medium altitudes in cultivation or in abandoned cultivation, rarely spontaneous. It is the most valuable and most universally used bamboo in the Philippines and is almost certainly not a native of the Archipelago, but of prehistoric introduction from Malaya. It grows in large clumps, reaching a height of 15 to 20 meters, and is characterized by the dense thicket of spreading, interlaced, very spiny branches surrounding the base of the culms. The Tagalog name *cauayan* is used for this species, but also in a generic sense for bamboo; *cauayan totoo*, frequently applied to this species meaning "true bamboo;" see Merrill, E. D., An interpretation of Rumphius's Herbarium Amboinense (1917) 97.

Illustrative specimen from Rizal Province, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 148*).

Bambus monogyna Blanco Fl. Filip. (1837) 268 (**sp. nov.**); ed. 2 (1845) 187; ed. 3, 1 (1877) 333 = **BAMBUSA VULGARIS** Schrad. in Wendl. Coll. Pl. 2 (1808) 26, *t. 47*.

Bambus mitis Blanco op. cit. 271 (sp. nov.); 188; 336 = **BAMBUSA VULGARIS** Schrad.

There is no doubt as to the specific identity of the two species Blanco described, and equally no doubt of the correctness of the reference of both to *Bambusa vulgaris* Schrad. Fernandez-Villar reduced the first to *Dendrocalamus strictus* Nees, and the second to *D. sericeus* Munro, but neither of these species is known from the Philippines. In describing *Bambusa mitis*, of which Blanco saw neither flowers nor fruits, he states: "Algunos dicen que esta especie es lo mismo que la *Monogyna.*" I have a number of specimens, some sterile, others in flower, received under the Tagalog name *cauayan quiling*, cited by Blanco under *Bambusa monogyna*, and others received under the Tagalog name *tiauanac*, cited by Blanco under *B. mitis*, and I cannot detect any specific differences between them. *Bambusa vulgaris* is widely distributed in the Philippines in the settled areas at low and medium altitudes and has undoubtedly been purposely introduced into the Archipelago; it does not grow in the primeval forest. *Bambusa blancoi* Steud. is a synonym.

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* See Merrill, E. D. On the identity of Blanco's species of Bambusa. *Am. Journ. Bot.* 3 (1916) 58–64.

Illustrative specimen from Balayan, Laguna Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 77*).

GIGANTOCHLOA Kurz

Bambus levis Blanco Fl. Filip. (1837) 272 (sp. nov.); ed. 2 (1845) 189; ed. 3, 1 (1877) 337=**GIGANTOCHLOA LEVIS** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 61 (*Gigantochloa scribneriana* Merr.!, *G. robusta* Kurz?).

Blanco's description is very short and imperfect, but there is no doubt that the species he intended is as here interpreted. It is the only bamboo growing in the Philippines to which his description at all applies. As described by Blanco, the leaves on the ultimate branchlets are unusually large; when young, at least, rather softly pubescent on the lower surface; and with scattered, short, thick projections (scarcely hairs) on the upper surface, the margins and the midrib on the upper surface scabrid; the sheaths are at first appressed-hirsute, in age becoming nearly glabrous. Seven collections from the provinces near Manila present flowers from January to April; Blanco saw dried flowers in June and remarks: "tal vez florecerá en Febr." I have received no specimens under the Tagalog name cited by Blanco, *cauayan boo*, its most common name being *cauayan sina*, that is, "Chinese bamboo", indicating merely that it is probably an introduced species, not necessarily, however, from China. It apparently does not occur outside of cultivation in the Philippines. *Gigantochloa robusta* Kurz, of Java, is probably the same.

Illustrative specimen from Tayabas Province, Luzon, March, 1914, *comm. D. L. Topping* (*Merrill: Species Blancoanae No. 310*).

SCHIZOSTACHYUM Nees

Bambus textoria Blanco Fl. Filip. (1837) 270 (sp. nov.); ed. 2 (1845) 188; ed. 3, 1 (1877) 335=**SCHIZOSTACHYUM TEXTORIUM** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 64 (*S. merrillii* Gamble!).

This species was reduced by Fernandez-Villar to *Gigantochloa atter* Kurz, but without good reason, although *G. atter* Kurz has been reported from the Philippines (Polillo) on the basis of specimens so named by Mr. Gamble. Blanco's description is very short and imperfect, and he states (under *B. lima*) that he had never seen the flowers of *calbang* (*B. textoria*). It is described as erect, about 6 yards high and the culm 1½ inches in diameter, the leaves sword-shaped, glabrous, the stems very straight and smooth, very common in some but not in all forests, much used by the natives, and known as *calbang*. Attempts to locate any bamboo under the Tagalog name *calbang* resulted in failure until an exploration of Batangas was commenced with

view to locating some of Blanco's doubtful species. The material distributed herewith is the form known in Batangas as *calbang*, it agrees with Blanco's description as to size, habit, and other characters indicated by Blanco, and may safely be assumed to represent the species Blanco described. *Schizostachyum merrillii* Gamble is a synonym of *S. textorium* (Blanco) Merr.

Illustrative specimen from Bauang, Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 714*).

Bambus lumampao Blanco Fl. Filip. (1837) 272 (sp. nov.); ed. 2 (1845) 189; ed. 3, 1 (1877) 338=**SCHIZOSTACHYUM LUMAMPAO** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 63 [*Schizostachyum mucronatum* Hack. in Philip. Journ. Sci. 3 (1908) Bot. 169].

While Blanco's description is short and imperfect there is not the slightest doubt as to the correctness of its interpretation as identical with *Schizostachyum mucronatum* Hack. It is an erect, thin walled, gregarious bamboo, in some provinces almost exclusively occupying large areas of land. It is generally known now as *caña boho*, but I have seen specimens of it under the native names *bocaui* and *lumampao* as cited by Blanco. Blanco's description, short and imperfect as it is, unmistakably applies to the species as here interpreted, which is abundant in some of the provinces near Manila.

Illustrative specimen from Lamao, Bataan Province, Luzon, March, 1915, there known as *caña boho* (*Merrill: Species Blancoanae No. 891*).

Bambus lima Blanco Fl. Filip. (1837) 271 (sp. nov.); ed. 2 (1845) 189; ed. 3, 1 (1877) 336=**SCHIZOSTACHYUM LIMA** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 62 [*Schizostachyum hallieri* Gamble in Philip. Journ. Sci. 5 (1910) Bot. 274].

This species is widely distributed in the Philippines at low and medium altitudes, being known from central Luzon to Palawan, Mindanao, and Basilan. Among the Philippine bamboos it is well characterized by its long internodes, these from 90 cm to 1.2 m in length. Blanco's description is very imperfect, and he saw no flowering or fruiting specimens. In spite of this I consider that there is absolutely no doubt as to the identity of the species. Blanco specifically mentions the long internodes: "La distancia entre nudo y nudo es grande", and this form is the only Philippine bamboo known to me with long internodes; moreover, the Tagalog name *anos* cited by Blanco for *Bambusa lima* is constant and is applied only to this species so far as our extensive collection of bamboos shows. Our four specimens of this species from the Tagalog provinces all bear the native name *anos*. Mr. Gamble's statement, *op. cit.*, that Blanco described

the leaves of *Bambusa lima* as "angusta" is an error, due to Steudel's and Munro's translation of the word "anchas" as narrow; it signifies wide, for he definitely states that the leaves are "lanceoladas, anchas", that is, lanceolate, broad. Blanco's description, so far as it goes, applies entirely to the species as here interpreted and to no other Philippine bamboo known to me.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, July, 1912, *comm. E. Quisumbing,* here known as *anos* (*Merrill: Species Blancoanae No. 41*).

Bambus diffusa Blanco Fl. Filip. (1837) 269 (sp. nov.); ed. 2 (1845) 187; ed. 3, 1 (1877) 334=**SCHIZOSTACHYUM DIFFUSUM** (Blanco) Merr. in Am. Journ. Bot. 3 (1916) 62 (*Schizostachyum acutiflorum* Munro, *Dinochloa diffusa* Merr.).

In spite of Blanco's description of the leaves as "pelosas por debajo," there is very little doubt that this is the species he intended, as frequently the leaves are slightly hairy. It is possible that he may have included more than one species in his description. The habit, most of the uses, the fruits, and its habitat, as indicated by Blanco, all apply to *Schizostachyum acutiflorum* Munro, which is common and widely distributed in Luzon, especially in those provinces near Manila. Blanco's specific name is the older, and I believe that it should be retained for the material distributed as illustrating the species, while certainly typical *Schizostachyum acutiflorum* Munro is also typical *Bambusa diffusa* Blanco =*Schizostachyum diffusum* Merr.

Illustrative specimen from Los Baños, Laguna Province, Luzon, March, 1914, *comm. F. C. Gates* (*Merrill: Species Blancoanae No. 418*).

CYPERACEAE

CYPERUS Linnaeus

Cyperus subrotundus Llanos Frag. Pl. Filip. (1851) 14 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 8=**CYPERUS DIFFORMIS** Linn.

Llanos's description agrees perfectly with this very common and widely distributed Linnean species. It is a characteristic weed of the rice paddies and low wet fallow lands.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 162*).

Cyperus imbricatus Llanos Frag. Pl. Filip. (1851) 17 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 11, non Retz., nec Willd.= **CYPERUS RADIATUS** Vahl.

This species was reduced by Naves to *Cyperus holciflorus* Presl=*Mariscus stuppeus* (Forst.) Merr. (*M. albescens* Gaudich.), to which species Llanos's description does not well apply,

and which Llanos otherwise described as *Cyperus ovatus*. The description and habitat is better that of *Cyperus radiatus* Vahl, a species very common and widely distributed in the settled areas of the Philippines.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 429*).

Cyperus nuttallii Llanos Frag. Pl. Filip. (1851) 14; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 9, non Torr.=**CYPERUS IRIA** Linn.

Llanos's conception of *Cyperus nuttallii* was reduced by Naves to *Cyperus flavicomus* Michx., a North American species. The description applies closely to the very common *Cyperus iria* Linn., which is a characteristic weed in rice paddies, low wet lands, etc., throughout the Philippines.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 174*).

Cyperus humilis Llanos Frag. Pl. Filip. (1851) 13 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 7, non Kunth=**CYPERUS COMPRESSUS** Linn.

This was definitely indicated by Llanos as a new species, but is not included in Index Kewensis. The description manifestly applies to the common and widely distributed *Cyperus compressus* Linn., a species that is abundant throughout the settled areas of the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 203*).

CYPERUS ROTUNDUS Linn.; Blanco Fl. Filip. (1837) 31; ed. 2 (1845) 21; ed. 3, 1 (1877) 40.

Cyperus curvatus Llanos Frag. Pl. Filip. (1851) 15; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 9, non Vahl=**CYPERUS ROTUNDUS** Linn.

Blanco certainly described a form of the Linnean species, probably var. *nilagiricus* (Hochst.) C. B. Clarke. In this reduction of Llanos's species I follow F.-Villar, for I can see no reason, from Llanos's description, to consider *Cyperus curvatus* Llanos other than this very common form. *Cyperus rotundus* is abundant in all parts of the Philippines in the settled areas.

Illustrative specimens from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 580*); Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 700*).

Cyperus caespitosus Llanos Frag. Pl. Philip. (1851) 14 (*caespitorus*); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 8, non Poir.=**CYPERUS HASPAN** Linn.

Llanos did not intend this as a new species, but thought that

his plant was the same as *Cyperus caespitosus* Poir. of Madagascar, as described by Sprengel Syst. 1: 221. Naves erroneously reduced it to *Cyperus dehiscens* Kunth, a species that does not extend to the Philippines. From the imperfect description and the indicated habitat the form that Llanos described can be nothing else than *Cyperus haspan* Linn.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 999*).

PYCREUS Beauvois

Cyperus strigosus Llanos Frag. Pl. Filip. (1851) 16; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 10, non Linn., nec aliorum=**PYCREUS ODORATUS** (Linn.) Urb. (*P. polystachyus* Beauv.).

Cyperus strigosus of Llanos was reduced by Naves to *Cyperus macrosciadion* Steud.=*Cyperus radiatus* Vahl; but *Cyperus imbricatus* Llanos, op. cit. 17, is unmistakably *Cyperus radiatus* Vahl, and it is improbable that Llanos would describe this very characteristic species twice and under separate names. Llanos's description agrees at least as well with *Pycreus odoratus* as with any other species, so it is assumed that this is the form he intended. It is common and widely distributed in the settled areas of the Philippines at low and medium altitudes, in wet lands, along small streams, etc.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 171*).

MARISCUS Vahl

Cyperus ovatus Llanos Frag. Pl. Filip. (1851) 15 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 10=**MARISCUS STUPPEUS** (Forst.) Merr. in Philip. Journ. Sci. **3** (1908) Bot. 398 (*M. albescens* Gaudich., *Cyperus pennatus* Lam.).

This species was reduced by Naves to *Cyperus distans* Linn., a form agreeing with Llanos's description neither in the characters indicated by Llanos nor in its habitat. By "esteros" Llanos certainly means brackish tidal streams, and *Mariscus stuppeus* is the only species growing in such a habitat that at all agrees with the description. The statement: "Una hojuela del involucro es de cuatro pies de largo" is a false one, no Philippine species of the entire family having such a long involucral leaf. It is common along the seashore and tidal streams throughout the Philippines.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 428*).

Cyperus luzoniensis Llanos Frag. Pl. Filip. (1851) 17 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 11=**MARISCUS DILUTUS (Vahl) Nees.**

Cyperus quadriflorus Llanos op. cit. 18 (sp. nov.); 12 (*cuadriflorus*) = **MARISCUS DILUTUS** (Vahl) Nees.

In the reductions of the above two species I have followed Naves. The first species is certainly correctly reduced, and the reduction has been verified by C. B. Clarke who has examined a specimen from Llanos; see Philip. Journ. Sci. 2 (1907) Bot. 81. The second species, *Cyperus cuadriflorus* (i. e., *quadriflorus*), is probably correctly reduced; at least I know of no other Philippine species that agrees with Llanos's description. *Mariscus dilutus* Nees (*M. microcephalus* Presl) is exceedingly variable in size and is common and widely distributed throughout the settled areas of the Philippines at low and medium altitudes, growing in open wet lands, in rice paddies, along streams, etc.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 658*).

KYLLINGA Rottboell

Kyllinga triceps Linn. f. (p. p.); Blanco Fl. Filip. (1837) 34; ed. 2 (1845) 23; ed. 3, 1 (1877) 44=**KYLLINGA MONOCEPHALA** Rottb.

The species is very common and widely distributed in the Philippines, Blanco's description applying unmistakably to Rottboell's species. *Kyllinga triceps* Linn. f. is in part identical with *K. monocephala* Rottb., the Linnean species having been based on two different forms.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 448*).

FUIRENA Rottboell

Fuirena striata Llanos Frag. Pl. Filip. (1851) 21 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 14=**FUIRENA CILIARIS** (Linn.) Roxb. (*F. glomerata* Lam.).

Llanos's description agrees perfectly with *Fuirena ciliaris*. The plant, agreeing with the habitat cited by Llanos, is a characteristic one of rice paddies. It is common and widely distributed in the settled areas of the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 173*).

SCIRPUS Linnaeus

Carex glomerata Blanco Fl. Filip. ed. 2 (1845) 24; ed. 3, 1 (1877) 45, non Thunb.=**SCIRPUS ARTICULATUS** Linn.

This was reduced by Fernandez-Villar to *Fimbristylis ferruginea* Vahl, but the reduction is manifestly wrong, although *F. ferruginea* is common at low altitudes in the Philippines, es-

pecially near the sea. Blanco's description calls for a plant that is similar in appearance to his *Carex tuberosa* [=*Eleocharis dulcis* (Burm. f.) Trin.], with many, short, conglomerate spikelets near the base of the stems. This description applies only to *Scirpus articulatus* Linn., among all the *Cyperaceae* known to me to occur in the Philippines. It is common in wet places in and about Manila and is probably of wide distribution in the Philippines.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 268*).

Cyperus difformis Blanco Fl. Filip. (1837) 32; ed. 2 (1845) 22; ed. 3, 1 (1877) 41, non Linn.=**SCIRPUS GROSSUS** Linn. f.

Scirpus kysoor Roxb.; Llanos Frag. Pl. Filip. (1851) 20 (*kisoor*); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 14 (*kisoor*) =**SCIRPUS GROSSUS** Linn. f.

Fernandez-Villar reduced *Cyperus difformis* Blanco to *Cyperus ornatus* R. Br., which is a synonym of *Cyperus procerus* Rottb., and a species that does not extend to the Philippines. C. B. Clarke, Philip. Journ. Sci. **2** (1907) Bot. 84, refers *Cyperus difformis* Blanco to *Cyperus malaccensis* Lam. This may be in part correct, but Blanco's description, at least for the most part, applies to *Scirpus grossus* L. f., which is very common in low wet lands about Manila. The only Philippine sedge known to me to which Blanco's statement "Esta planta * * * de la altura de un hombre, y su tallo se hace de más de una pulgada de grueso" applies is *Scirpus grossus* Linn. f., which is commonly known by the Tagalogs about Manila as *tiquio*, the native name cited by Blanco. *Scirpus kysoor* Llanos was reduced by Fernandez-Villar to *Scirpus maritimus* Linn., a species that does not occur in the regions from which Llanos secured his material, and one to which his description does not at all apply. I can see no reason for considering Llanos's species other than the common *Scirpus grossus* Linn. f.

Illustrative specimens from Calumpit, Bulacan Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 692*); Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 564*).

ELEOCHARIS R. Brown

Carex tuberosa Blanco Fl. Filip. (1837) 35 (sp. nov.); ed. 2 (1845) 24; ed. 3, 1 (1877) 45, *t. 15*, non Degl.=**ELEOCHARIS DULCIS** (Burm. f.) Trin. (*Eleocharis plantaginoidea* W. F. Wight; *E. plantaginea* R. Br., *Andropogon dulcis* Burm. f.).

This species was reduced by Naves to *Eleocharis tuberosa* Schultes. It is of local occurrence in the Philippines, growing

in open very wet places or in shallow water. The tubers, known as *apulid* and *cabezas de negrito* (Sp.=Negrito's heads) are sold in large quantities in the Manila markets in the months of October to December; see Merrill, E. D., An interpretation of Rumphius's Herbarum Amboinense (1917) 104.

Illustrative specimen from Obando, Bulacan Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 395*).

Scirpus retroflexus Llanos Frag. Pl. Filip. (1851) 19; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 13, non Poir.=**ELEOCHARIS CARIBAEA** (Rottb.) Blake in Rhodora 20 (1918) 24 (*E. capitata* Auct., non R. Br.).

This reduction was made by Naves, which is certainly the correct disposition of the plant Llanos described and erroneously ascribed to *Scirpus retroflexus* Poir. as described by Sprengel Syst. 1: 205. *Eleocharis capitata* R. Br. is widely distributed in the Philippines at low altitudes.

Illustrative specimen from Manila, Luzon, January, 1918 (*Merrill: Species Blancoanae No. 1063*).

FIMBRISTYLIS Vahl

Scirpus niloticus Blanco Fl. Filip. (1837) 33; ed. 2 (1845) 23; ed. 3, 1 (1877) 43, non Gmel.=**FIMBRISTYLIS MILIACEA** Vahl.

This is one of the most abundant and widely distributed rice paddy weeds in the Philippines.

Illustrative specimen . from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 545*).

Scirpus falcatus Llanos Frag. Pl. Filip. (1851) 20; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 13, non Vahl=**FIMBRISTYLIS** sp.

Fernandez-Villar considered that Llanos correctly interpreted Vahl's species and referred it to *Fimbristylis falcata* (Vahl) Kunth, a species that does not extend to the Philippines. From the very short and imperfect description given by Llanos it is suspected that the form he had before him was the common and widely distributed *Fimbristylis diphylla* Vahl.

SCLERIA Bergius

Scleria foveolata Llanos Frag. Pl. Filip. (1851) 103; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 79, non Cav.=**SCLERIA SCROBICULATA** Nees.

This reduction follows that of Fernandez-Villar, and Llanos's description applies to *Scleria scrobiculata* Nees, which is common and widely distributed in the Philippines at low and medium altitudes. While Llanos's species is undoubtedly *Scleria scrobiculata* Nees, interpreting the species in a broad sense, I am not sure whether the illustrative specimens are really referable to *S.*

scrobiculata or to the manifestly very closely allied *S. purpureo-vaginata* Boeckl., or *S. multifoliata* Boeckl. The distinctions between the three species are not clear to me.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 680*).

PALMAE

CORYPHA Linnaeus

Corypha umbraculifera Blanco Fl. Filip. (1837) 228; ed. 2 (1845) 160; ed. 3, 1 (1877) 290, non Linn.=**CORYPHA ELATA** Roxb.

Naves considered that Blanco correctly interpreted the Linnean species, but I have followed Beccari in considering the Philippine plant referable to *Corypha elata* Roxb. The species is found throughout the Philippines at low altitudes, in river valleys, open grasslands, etc., and is the largest palm found in the Archipelago. The leaves are up to 3 m in diameter, suborbicular, the segments about 100, extending one-half to two-thirds to the base; the very stout petioles are about 3 m long. The species flowers at maturity and then dies. The great terminal inflorescence is conical in shape, up to 7 m high, the lower branches up to 3.5 m in length, the upper gradually shorter. It is known to the Tagalogs and Visayans as *buri* or *buli* and to the Ilocanos as *silag*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 412*).

LIVISTONA R. Brown

Corypha minor Blanco Fl. Filip. (1837) 229 (*Coripha*) (sp. nov.); ed. 2 (1845) 161 (*Coripha*); ed. 3, 1 (1877) 290, non Jacq.=**LIVISTONA BLANCOI Merr. nom. nov.**

Corypha minor Blanco is unmistakably a species of *Livistona*, the palms of this genus being widely known in the Philippines as *anahao*. His description of the leaves is definite in the statement that the petioles were unarmed: "Peciolos sin aguijones." For this reason the reduction of *Corypha minor* Blanco to *Livistona rotundifolia* Mart., is inadmissible, the latter, based wholly on *Saribus* Rumph. Herb. Amb. 1: 42, *t. 8*, having spiny petioles. The Philippine species with smooth petioles are *Livistona merrillii* Becc. and *L. whitfordii* Becc., but *Livistona blancoi* Merr., as here interpreted, differs remarkably from both of these in its short leaf-segments and in its much more slender petioles. Naves reduced *Corypha minor* Blanco to *Livistona rotundifolia* Mart., and in part to *L. papuana* Becc.; the former has spiny petioles, while the latter does not occur in the Phil-

ippines. There is no reason for considering that Blanco's description is based on material representing more than one species.

Illustrative specimen from Unisan, Tayabas Province, Luzon, May 11, 1916, there known as *anahao, comm. Felix Bawan* (*Merrill: Species Blancoanae No. 919*).

CALAMUS Linnaeus

CALAMUS USITATUS Blanco Fl. Filip. (1837) 265 (sp. nov.); ed. 2 (1845) 185; ed. 3, 1 (1877) 330, *t. 99* (*C. mollis*).

After a careful consideration of all the accumulated data and material here, in connection with a study of Blanco's description, I am obliged to dissent from the current interpretation of this species. It has been placed by Beccari and others as a synonym of *Daemonorops gaudichaudii*, but I interpret it as the species described and figured by Beccari as *Calamus mollis* (non Blanco!). It was reduced by Naves in part to *Daemonorops rumphii* Mart., and in part to *Calamus pisicarpus* Blume, neither of which occur in the Philippines. While Blanco's description may have been based on a mixture of specimens, this is entirely improbable. Beccari has interpreted *Calamus usitatus* to be a *Daemonorops* chiefly from the calyx characters given by Blanco. I interpret it especially by the leaf characters given by Blanco, its great abundance at low altitudes in the provinces contiguous to Manila, its edible fruits, and the almost universal and nearly exclusive use of the native name *uay* for this plant. See the discussion of *Daemonorops mollis, infra.*

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, there known as *uay* (*Merrill: Species Blancoanae No. 682*).

CALAMUS MAXIMUS Blanco Fl. Filip. (1837) 266 (sp. nov.); ed. 2 (1845) 185; ed. 3, 1 (1877) 331.

This is a perfectly valid species and is *Calamus merrillii* Becc. in Martelli Webbia 1 (1905) 347, Ann. Bot. Gard. Calcutta 11 (1908) 105, 390, *t. 167*. It is the same as Beccari's original identification of Blanco's species, *Merrill 1893*, in Perk. Frag. Fl. Philip. (1904) 45, which number Beccari later made the type of *Calamus merrillii* Becc., at the same time referring *Calamus maximus* Blanco to *Calamus ornatus* Blume var. *philippinensis* Becc. *Palasan* is *Calamus maximus* as here interpreted, while *Calamus ornatus* Blume var. *philippinensis* Becc. is invariably *limoran*, and the two are never confused by the natives. Both native names are cited by Blanco, the former under *Calamus maximus*, the latter under an undescribed species of *Calamus*

following the description of *Calamus gracilis*. Moreover, Blanco's description applies unmistakably to the present interpretation of the species, and not to *Calamus ornatus* Blume. The leaflets are described as: "Hojuelas lanceoladas, con tres nervios notables, y en los dos laterales una hilera de pelos tiesos en la página superior y en la inferior una sola hilera de lo mismo." This is a character of *Calamus maximus* as here interpreted, but *Calamus ornatus* Blume var. *philippinensis* Becc. is without such hairs.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, March, 1915, there known as *palasan* (*Merrill: Species Blancoanae No. 879*).

Calamus gracilis Blanco Fl. Filip. (1837) 267 (sp. nov.); ed. 2 (1845) 186; ed. 3, 1 (1877) 332, non Roxb.=**CALAMUS BLANCOI** Kunth.

This species is manifestly very closely allied to *Calamus usitatus* Blanco (*C. mollis* Auct., non Blanco), and is perhaps identical with it. I have seen no specimen of *Cuming 1225*, or *Loher 1376*, on which Beccari based his conception of *Calamus blancoi*, but our Batangas material of *talola* seems to agree with the figure given by Beccari, taken from *Cuming 1225*, and with the description. Cuming's specimen was from Ilocos Norte Province, Luzon, from his own list of localities. Batangas is the only province, so far as our collections and data show, where *talola* is in use as a name for *Calamus*, and it is apparently generally applied to the specific form distributed herewith. The closely allied *Calamus usitatus* Blanco (*C. mollis* Auct., non Blanco), is known in the same locality as *talolang lutukan*. The striking differences are that in *talola* the leaflets are constantly solitary, while in *talolang lutukan*, and in very many of our numerous specimens of *Calamus usitatus* some of the leaflets are frequently paired on the same side of the rachis. It was erroneously reduced by Naves to *Calamus buroensis* Mart., a species that does not extend to the Philippines.

Illustrative specimen from Mount Batulao, Batangas Province, Luzon, February, 1915, there known as *talola* (*Merrill: Species Blancoanae No. 791*).

DAEMONOROPS Blume

Calamus mollis Blanco Fl. Filip. (1837) 264 (sp. nov.); ed. 2 (1845) 184; ed. 3, 1 (1877) 329=**DAEMONOROPS MOLLIS** (Blanco) comb. nov. (*D. gaudichaudii* Mart.).

This is one of the commonest rattans at low and medium altitudes in Luzon, is abundant in all the provinces contiguous to Manila, is universally and rather exclusively known as *ditán*,

has non-edible fruits, and otherwise agrees with Blanco's description. On account of these data I am obliged to differ from all other authors in my interpretation of *Calamus mollis* Blanco. Beccari, Ann. Bot. Gard. Calcutta 11 (1908) 212–215, has interpreted *Calamus mollis* as a distinct species of *Calamus*, with *C. haenkeanus* Mart. as a synonym. Naves reduced *Calamus mollis* to *C. haenkeanus* Mart. From the data and abundant material now available here I cannot agree with this interpretation of *Calamus mollis* Blanco, but am forced to the opinion that *Calamus mollis* Blanco is identical with *Daemonorops gaudichaudii* Mart. and that *Calamus mollis* of Beccari and other authors is *Calamus usitatus* Blanco, a species that was erroneously reduced by Beccari to *Daemonorops gaudichaudii* Mart.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914, there known as *ditán* (*Merrill: Species Blancoanae No. 685*).

CARYOTA Linnaeus

Caryota urens Blanco Fl. Filip. (1837) 740; ed. 2 (1845) 510; ed. 3, 3 (1879) 142, *t. 349*, non Linn.=**CARYOTA CUMINGII** Lodd.

Caryota urens Linn. does not occur in the Philippines, and Martius was correct in referring *C. urens* Blanco to *C. cumingii* Lodd. It is widely distributed in the Philippines at low altitudes and is generally known to the Tagalogs as *pugáhan*, sometimes as *taquípan*, and to the Visayans as *taquípan* and *patícan*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 736*).

ARENGA Labillardière

Caryota tremula Blanco Fl. Filip. (1837) 744 (sp. nov.); ed. 2 (1845) 512; ed. 3, 3 (1879) 144=**ARENGA TREMULA** (Blanco) Becc. in Philip. Journ. Sci. 4 (1909) Bot. 612, name only, excluding description and cited specimens! (*Arenga mindorensis* Becc.!).

Blanco's species was considered by Naves as *Wallichia tremula* Mart., which was based on Blanco's description. It is absolutely certain that *Caryota tremula* Blanco is the species described by Beccari as *Arenga mindorensis*, and that the specimens referred by Beccari to *Arenga tremula* (Blanco) Becc., and the description given by him, refer to an entirely different species very closely allied to, and very probably identical with *Arenga ambong* Becc. *Arenga tremula* as interpreted by Beccari does not grow in any of the provinces from which Blanco secured his botanical material. *Arenga tremula* (*A. mindorensis* Becc.), as I interpret it, occurs in abundance, although locally, in the provinces of Bataan, Laguna, Batangas, and Tayabas, and in Mindoro; a very

large number of Blanco's species were from Batangas, Laguna, and Bataan. The uses indicated by Blanco are those of the palm I refer to *Arenga tremula*. Blanco's description, moreover, certainly applies to *Arenga mindorensis* Becc., and not to the form Beccari refers to *Arenga tremula*. The leaflets are described as very long, linear, with the apex "hendido en dos partes desiguales, o en forma de dos arpas." This description applies to some of the leaflets of *Arenga mindorensis*, but to none of the leaflets of *Arenga tremula* as interpreted by Beccari. Moreover in Bataan, Batangas, Laguna, and Tayabas *Arenga mindorensis*=*A. tremula* is universally known as *dumayáca*, the native name cited by Blanco, a name that does not appear on any of our specimens of *Arenga ambong* and allied forms.

Illustrative specimen from Mount Batulao, Batangas Province, Luzon, February, 1915, there known as *dumayáca* (*Merrill: Species Blancoanae No. 828*).

Caryota onusta Blanco Fl. Filip. (1837) 741 (sp. nov.); ed. 2 (1845) 511; ed. 3, 3 (1879) 143, *t. 419*=**ARENGA PINNATA** (Wurmb) Merr. Interpret. Herb. Amb. (1917) 119. (*Saguerus pinnatus* Wurmb, ***Arenga saccharifera*** Labill.).

This palm is found throughout the Philippines at low and medium altitudes, growing in the settled areas as well as in the primeval forest in some localities. From its interrupted distribution, and the fact that it is entirely wanting in perhaps most of the forests of the Philippines, I consider that the species is probably not a native of the Archipelago, but a purposely introduced one, and one that has been distributed from island to island by the natives. Its occurrence in some regions in the primeval forest can probably be accounted for by the fact that the fully matured fruits are eaten by wild hogs, which would tend to scatter the species in the forested regions.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 652*).

ORANIA Zippel

Caryota palindan Blanco Fl. Filip. ed. 2 (1845) 513 (sp. nov.); ed. 3, 3 (1879) 145=**ORANIA PALINDAN** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 88.

This species is widely distributed in Luzon, occurring in primeval forests at medium altitudes. In appearance it much resembles the common coconut palm. Blanco's species was erroneously reduced by Naves to *Orania regalis* Blume, a species that does not extend to the Philippines. *Orania philippinensis*

Scheff. ex Becc. in Ann. Jard. Bot. Buitenz. 2 (1885) 156, is a synonym.

Illustrative specimen from Sablang, Benguet Subprovince, Luzon, March, 1912 (*Merrill: Species Blancoanae No. 144*).

ARECA Linnaeus

ARECA CATECHU Linn. (err. *cathecu*); Blanco Fl. Filip. (1837) 714; ed. 2 (1845) 494; ed. 3, 3 (1879) 120, *t. 350.*

The Linnean species was correctly interpreted by Blanco. It is commonly cultivated throughout the Philippines and is often spontaneous. There is no reason whatever for considering the species a native of the Archipelago, although it has been collected at least once (in Palawan) in the primeval forest, but here near an ancient trail. It is certainly a purposely introduced plant in the Philippines and of prehistoric introduction. The specific name *cathecu* is the original spelling, but it is a manifest typographic error for *catechu.*

Illustrative specimen (immature fruits) from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 213*).

Areca catechu Linn. var. **humilis** Blanco Fl. Filip. (1837) 716 (var. nov.); ed. 2 (1845) 495; ed. 3, 3 (1879) 120=**ARECA IPOT** Becc. in Elm. Leafl. Philip. Bot. 2 (1909) 639.

The form described by Blanco as the variety *humilis* of *Areca catechu* is a very distinct endemic species, recently described by Beccari as *Areca ipot.* It was erroneously reduced by Naves to *Areca catechu* Linn., var. *pumila* Miq. The species is of local distribution in the Philippines and in Luzon is generally known as *sacsic* and *ipod* (not *ipot*); Blanco gives the Tagalog name as *mañgipod.*

Illustrative specimen from Nagcarlan, Laguna Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 844*).

COCOS NUCIFERA Linn.; Blanco Fl. Filip. (1837) 716; ed. 2 (1845) 495 (*nucigera*); ed. 3, 3 (1879) 123, *t. 364.*

The coconut palm is very extensively cultivated in the Philippines and presents a number of more or less distinct forms, varying in the size of the plant and in the size, shape, and quality of the fruits. It is most certainly not a native of the Archipelago and nowhere occurs spontaneously in the Philippines. It is certainly of prehistoric introduction into the Archipelago.

Illustrative specimen from the Catubig River, Samar, February, 1916 (*Merrill: Species Blancoanae 927*).

Cocos mamillaris Blanco Fl. Filip. (1837) 722 (*mammilaris* (sp. nov.); ed. 2 (1845) 499 (*mamilaris*); ed. 3, 3 (1897) 123=**COCOS NUCIFERA** Linn., var.

Blanco's species was reduced by Naves to *Cocos nucifera* Linn. var. *lansiformis* Miq. without sufficient reason. The palm is much smaller than the usual form of *Cocos nucifera*, the trunk much more slender, a little larger than that of *Areca catechu*, flowering freely when less than a meter high, and the fruits are very much smaller, as indicated by Blanco.

Illustrative specimen from Nagcarlan, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 858*).

NIPA (Nypa) Wurmb

Nipa litoralis Blanco Fl. Filip. (1837) 662 (sp. nov.)=**NIPA FRUTICANS** Wurmb; Blanco op. cit. ed. 2 (1845) 461; ed. 3, 3 (1879) 68, *t. 386*.

The form proposed by Blanco as a new species, *Nipa litoralis*, was correctly reduced by him in the second edition of the Flora de Filipinas to *N. fruticans* Wurmb. The species is found along tidal streams, within the influence of salt or brackish water, throughout the Philippines, and is locally of great economic importance, its leaves being used to thatch houses, the sap secured from the peduncles of the pistillate inflorescences being one of the chief sources of the alcohol distilled in the Archipelago.

Illustrative specimen from Malabon, Rizal Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 420*).

ARACEAE

POTHOS Linnaeus

Batis hermaphrodita Blanco Fl. Filip. (1837) 791 (sp. nov.); ed. 2 (1845) 544; ed. 3, 3 (1879) 197=**POTHOS HERMAPHRODITUS** (Blanco) **comb. nov.** (***Pothos longifolius*** **Presl**).

As imperfect as is Blanco's description, there is no other plant known from the Philippines to which it can apply. Naves reduced it, by error, to *Pothos chapelieri* Schott, a species that does not extend to the Philippines. It is widely distributed in Luzon at low and medium altitudes.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, November, 1912 (*Merrill: Species Blancoanae No. 57*).

RHAPHIDOPHORA Hasskarl

Pothos pinnata Blanco Fl. Filip. (1837) 646; ed. 2 (1845) 450; ed. 3, 3 (1879) 48, *t. 339*, non Linn.=**RHAPHIDOPHORA MERRILLII** Engl. **Bot. Jahrb. 37 (1905) 115.**

This species was reduced by Naves to *Epipremnum medium* Engl., a species that was credited to the Philippines by the

reduction of *Rhaphidophora huegeliana* Schott. However, *Rhaphidophora huegeliana* is a distinct species=*Epipremnopsis huegelianum* Engl.; does not occur in the vicinity of Manila; and is a species to which Blanco's description does not apply. *Rhaphidophora merrillii* Engl. is fairly common in the vicinity of Manila; is widely distributed in the Philippines at low altitudes; agrees with Blanco's description and the indicated time as to flowering; and is very generally known to the Tagalog as *tibátib*, one of the names cited by Blanco.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915, there known as *tibátib* (*Merrill: Species Blancoanae No. 715*).

AMORPHOPHALLUS Blume

Arum decurrens Blanco Fl. Filip. (1837) 656 (sp. nov.); ed. 2 (1845) 457; ed. 3, 3 (1879) 62=**AMORPHOPHALLUS CAMPANULATUS (Roxb.) Blume.**

Arum decurrens Blanco is the whole basis of *Amorphophallus decurrens* Kunth, which Engler, Pflanzenreich 48 (1911) 108, has admitted as a doubtful species. It is identical with *A. campanulatus* Blume. The species is widely distributed in the settled areas of the Philippines at low and medium altitudes, growing in thickets, in waste places, along roadsides, etc., but never in the virgin forests. The spathes and spadices are enormously variable in size, depending largely on the size of the corm, and shrink much in drying.

Illustrative specimen from Pantay, Rizal Province, Luzon, June (flowers), September (leaves), 1915, there known as *pongápong* (*Merrill: Species Blancoanae No. 1044*).

ALOCASIA Schott

Calla maxima Blanco Fl. Filip. (1837) 658 (sp. nov.)=**Arum grandifolium** Blanco op. cit. ed 2 (1845) 458; ed. 3, 3 (1879) 63, *t. 177* (as *Arum grandifolium* Spreng.), non Jacq.=**ALOCASIA MACRORRHIZA (Linn.) Schott.**

Calla badian Blanco Fl. Filip. (1837) 658 (sp. nov.)=**ALOCASIA MACRORRHIZA Schott.**

Calla maxima was reduced by Naves to *Alocasia indica* (Roxb.) Schott, but seems rather to be referable to *A. macrorrhiza*. It is common and widely distributed in the Philippines and exceedingly variable in size; when young acaulescent or nearly so, later with a trunk up to 4 m in height. *Calla badian* Blanco is included in the second and third editions of the Flora de Filipinas, without specific name, casually mentioned under *Caladium esculentum;* i. e., *Colocasia esculenta* Schott. F.-Villar reduced it to *Alocasia indica* Schott var. *variegata* Engl., while

I previously considered it to be a form of *Colocasia antiquorum* Schott=*C. esculentum* Schott. From the native names cited, there being no other data from which its status can be determined, as Blanco gives no description, it can scarcely be other than a form of *Alocasia macrorrhiza* Schott.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914, there known as *biga* (*Merrill: Species Blancoanae No. 630*).

COLOCASIA Schott

Calla gaby Blanco Fl. Filip. (1837) 659 (sp. nov.)=**Caladium esculentum** Vent.; Blanco op. cit. ed. 2 (1845) 459; ed. 3, 3 (1879) 64=**COLOCASIA ESCULENTA** (L.) Schott. (*C. antiquorum* Schott.).

The taro, widely known in the Philippines as *gabi*, is extensively cultivated, a number of forms or varieties being found in the Archipelago. It is at times at least subspontaneous, but is certainly not a native of the Philippines.

Illustrative specimen from Los Baños, Laguna Province, Luzon, May, 1914, *comm. F. C. Gates* and *F. Q. Otanes* (*Merrill: Species Blancoanae No. 21*).

TYPHONIUM Schott

Arum divaricatum Blanco Fl. Filip. (1837) 657; ed. 2 (1845) 458; ed. 3, 3 (1879) 62, non Linn. (vel Linn. p. p. tantum)=**TYPHONIUM CUSPIDATUM** (Blume) Decne.

This was reduced by Naves to *Typhonium divaricatum* (Linn.) Decne., but the original *Arum divaricatum* Linn. was in part *Typhonium divaricatum* Decne. and in part *T. cuspidatum* Decne.; the Philippine form described by Blanco is apparently the latter. It is found only in and near towns in the Philippines and probably is an introduced plant in the Archipelago.

Illustrative specimens from Manila, Luzon, August, 1912, September, 1916 (*Merrill: Species Blancoanae Nos. 676, 970*).

ARISAEMA Linnaeus

Calla polyphylla Blanco Fl. Filip. (1837) 659 (sp. nov.)=**Caladium ? digitatum** Blanco op. cit. ed. 2 (1845) 459 (nom. nov.); ed. 3, 3 (1879) 64=**ARISAEMA POLYPHYLLUM** (Blanco) Merr. (*A. cumingii* Schott.).

A species of wide distribution in the Philippines at medium and higher altitudes, exceedingly variable in vegetative characters. The leaves vary greatly in width, and the maximum length I have observed, on very luxuriant specimens, is about 25 cm.

Illustrative specimen from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 460*).

PISTIA Linnaeus

PISTIA STRATIOTES Linn.; Blanco Fl. Filip. (1837) 651; ed. 2 (1845) 454; ed. 3, 3 (1879) 55, *t. 468.*

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the Philippines in stagnant pools, slow streams, etc., at low altitudes, its common Tagalog name being *quiapo*, its Ilocano name *loloan*. It is exceedingly variable in size, the rosettes in luxuriant specimens up to 20 cm in diameter.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 94*).

LEMNACEAE

LEMNA Linnaeus

Lemna gibba Blanco Fl. Filip. (1837) 672; ed. 2 (1845) 468; ed. 3, 3 (1879) 78, non Linn.=**LEMNA PAUCICOSTATA** Hegelm.

This species is frequently very abundant on stagnant pools about Manila during the rainy season, often associated with *Wolffia arrhiza* Wimm., less frequently associated with *Spirodela polyrrhiza* (Linn.) Schleid. The Tagalog names are *inalai, lia,* and *lija.* It is widely distributed in the Philippines. This is probably the form indicated by Llanos as **Conferva lia** Llanos Frag. Pl. Filip. (1851) 113 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4^1 (1880) 92, regarding which he naively states that he never had any occasion to write a description of it, but that there was scarcely any doubt as to its belonging in *Conferva.* There is no description.

Illustrative specimen from Manila, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 131*).

FLAGELLARIACEAE

FLAGELLARIA Linnaeus

FLAGELLARIA INDICA Linn.; Blanco Fl. Filip. ed. 2 (1845) 196; ed. 3, 1 (1877) 347.

Blanco correctly interpreted the Linnean species, which is common throughout the Archipelago at low and medium altitudes. It is commonly known as *balinguay.*

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 386*).

BROMELIACEAE

ANANAS Tournefort

Bromelia ananas Linn.; Blanco Fl. Filip. (1837) 230; ed. 2 (1845) 162; ed. 3, 1 (1877) 291, *t. 458*=*Ananas sativus* Schultes f.=**ANANAS COMOSUS** (Linn.) Merr. Interpret. Herb. Amb. (1917) 133 (*Bromelia comosa* Linn.).

The pineapple is generally cultivated throughout the Philippines and in some regions, notably parts of Palawan, has become thoroughly naturalized. It was introduced from Mexico at an early date by the Spaniards and is universally known in the Philippines by its Spanish name *piña*. *Bromelia pigna* Perr. (1825), based on Philippine specimens, is a synonym.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 778*).

COMMELINACEAE

POLLIA Thunberg

Lechea minor Blanco Fl. Filip. (1837) 52; ed. 2 (1845) 35; ed. 3, 1 (1877) 65, non Linn.=**POLLIA SORZOGONENSIS** (E. Mey.) Endl.

This species is common and widely distributed in the Philippines, occurring usually in forests and in shaded ravines.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 586*).

COMMELINA Linnaeus

Commelina polygama Blanco Fl. Filip. (1837) 25 (*poligama*); ed. 2 (1845) 18; ed. 3, 1 (1877) 34, *t. 13*, non Roth=**COMMELINA BENGHALENSIS** Linn.

This species is common and widely distributed throughout the settled areas of the Philippines at low and medium altitudes. It is apparently an introduced plant in the Archipelago.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 135*).

RHOEO Hance

Tradescantia discolor L'Hérit.; Blanco Fl. Filip. (1837) 232; ed. 2 (1845) 163 (*discolar*); ed. 3, 1 (1877) 294, *t. 84*=**RHOEO DISCOLOR (L'Hérit.) Hance.**

This American species was correctly interpreted by Blanco. It is found in the Philippines only in cultivation.

Illustrative specimen from Manila, Luzon, April 18, 1914 (*Merrill: Species Blancoanae No. 240*).

CYANOTIS D. Don

Tradescantia cristata Jacq.; Blanco Fl. Filip. (1837) 231; ed. 2 (1845) 163; ed. 3, 1 (1877) 293=**CYANOTIS CRISTATA** (Linn.) Roem. & Schultes.

The species was correctly interpreted by Blanco but properly belongs in the genus *Cyanotis*. It is to be noted that this is not the plant figured by Naves, as representing Blanco's species, in the third edition of the Flora de Filipinas, *t. 83*, the figure being *Commelina nudiflora* Linn. It is widely distributed in the Philippines at low and medium altitudes in the settled areas.

Illustrative specimen from near Fort William McKinley, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 155*).

FLOSCOPA Loureiro

Tradescantia geniculata Blanco Fl. Filip. (1837) 232; ed. 3, 1 (1877) 294, non Jacq., nec Lour.=**FLOSCOPA SCANDENS** Lour.

This species is widely distributed in the Philippines at low and medium altitudes. It was omitted from the second edition of the Flora de Filipinas, but was included by F.-Villar and Naves in the third edition.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 118*).

PONTEDERIACEAE

MONOCHORIA Presl

Pontederia vaginalis Blanco Fl. Filip. (1837) 255; ed. 2 (1845) 178; ed. 3, 1 (1877) 320, *t. 466*, non Burm. f.=**MONOCHORIA HASTATA** (Linn.) Solms.

This species is common and widely distributed in the Philippines at low altitudes in fresh-water swamps, along streams and stagnant pools, etc., and is abundant about Manila.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 419*).

LILIACEAE

ALOË Linnaeus

Aloë humilis Blanco Fl. Filip. (1837) 256; ed. 2 (1845) 179; ed. 3, 1 (1877) 321, *t. 95*, non Linn.=**ALOË VERA** Linn.

Naves reduced this to *Aloë barbadensis* Mill., which is a synonym of *Aloë vera* Linn. The plant is still cultivated on a very limited scale in gardens in Manila and in some of the larger towns of the Philippines, being widely known as *sábila*. It rarely flowers in the Philippines.

Illustrative specimen from Batangas, Batangas Province,

Luzon, October 21, 1916, there known as *sábila* (*Merrill: Species Blancoanae No. 1005*).

ALLIUM Linnaeus

Allium tricoccum Blanco Fl Filip. (1837) 239; ed. 2 (1845) 167; ed. 3, 1 (1877) 301, *t. 87*, non Ait.=**ALLIUM TUBEROSUM** Roxb.

Naves reduced this to *Allium uliginosum* Don, which is supposed to be a synonym of *A. tuberosum* Roxb., which in turn was described from specimens grown at Calcutta. The plant is commonly cultivated by Chinese gardeners in Manila as a vegetable, being especially used for flavoring soups, etc. It is universally known as *cuchai*, a name derived from the Cantonese *kau choy*, indicating that the plant itself was introduced into the Philippines by the Chinese. It rarely produces flowers in Manila. It may not be distinct from *Allium porrum* Linn.

Illustrative specimen from Manila, Luzon, from Chinese vegetable gardens, flowering in June and July (*Merrill: Species Blancoanae No. 1021*).

PLEOMELE Salisbury

Pandanus inermis Blanco Fl. Filip. ed. 2 (1845) 537 (sp. nov.); ed. 3, 3 (1879) 184, non Roxb.=**PLEOMELE ANGUSTIFOLIA** (Roxb.) N. E. Br. (*Dracaena angustifolia* Roxb.).

Blanco's entire description consists of the following: "Hojas esparcidas, y sin ganchos.=Es un Pandan, que he visto en los bosques de Angat, de unos nueve pies de alto, y no se si se hará mayor. No tenía flores ni fruto." By F.-Villar it was reduced to *Pandanus moschatus* "Rumph." (Miquel), a species that does not occur in the Philippines. *Pandanus inermis* Blanco is, without doubt, *Pleomele* (*Dracaena*), and from our material I cannot distinguish it from *Pleomele angustifolia* (Roxb.) N. E. Br. It is variable and is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimens (topotype of *Pandanus inermis* Blanco) from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 668*); Lamao, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 902*).

TAETSIA Medicus

(*Cordyline* Commerson)

Dracaena terminalis Linn.; Blanco Fl. Filip. (1837) 263; ed. 2 (1845) 183; ed. 3, 1 (1877) 328, *t. 98*=*Cordyline terminalis* Kunth=**TAETSIA FRUTICOSA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 137 (*Convallaria fruticosa* Linn.).

The Linnean species was correctly interpreted by Blanco, but the specific name *fruticosa* is older. It occurs in the Philippines only as a cultivated plant. It was probably of prehistoric in-

troduction in the Philippines, but was possibly not introduced until after the Spanish occupation of the Archipelago. It occurs throughout the Archipelago in the settled areas, but is nowhere wild.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 512*).

SMILAX Linnaeus

Smilax pseudochina Blanco Fl. Filip. (1837) 795; ed. 2 (1845) 548; ed. 3, 3 (1879) 204, non Linn.=**SMILAX BRACTEATA** Presl (*S. blancoi* Kunth).

Smilax fistulosa Blanco op. cit. 796 (sp. nov.); 549; 205=**SMILAX BRACTEATA** Presl.

This species is common and widely distributed in Luzon and is the only representative of the genus found near Manila. There is no doubt whatever that both *Smilax pseudochina* Blanco and *S. fistulosa* are the same species and that both are identical with *S. bracteata* Presl; *Smilax blancoi* Kunth is merely a new name for *S. pseudochina* Blanco. Naves was entirely unjustified in referring *S. pseudochina* Blanco to *S. china*, *S. laevis*, and *Heterosmilax borneensis*, none of which occur in the Philippines, except the first. To *Smilax bracteata* Presl should probably also be referred, in part, **Smilax divaricata** Blanco op. cit. 795 (sp. nov.); 548; 206, so far as this species is a *Smilax*. The root characters and properties assigned to the species belong with *Smilax*, but the description of the leaves applies to *Dioscorea:* "Hojas * * * asaeteadas, con los lobulos laterales mui divergentes." The flowers and fruits are not described.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 572*).

Smilax latifolia Blanco Fl. Filip. ed. 2 (1845) 548 (sp. nov.); ed. 3, 3 (1879) 204, non R. Br.=*Smilax vicaria* Kunth Enum. 5 (1850) 262=**SMILAX LEUCOPHYLLA** Blume.

Smilax vicaria Kunth is merely a new name for *S. latifolia* Blanco, non R. Br., and the species, accordingly, must be typified by Blanco's description. I can see no reason, however, for distinguishing the Philippine form from the Malayan *Smilax leucophylla* Blume. It is not common in the Philippines, but is apparently widely distributed, growing in forests at medium altitudes. It was erroneously reduced by Naves to *Smilax macrophylla* Roxb., a species that does not occur in the Philippines.

Illustrative specimens from Bosoboso, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 690*); San Antonio, Laguna Province, Luzon (*Merrill: Species Blancoanae No. 951*).

AMARYLLIDACEAE

CRINUM Linnaeus

Haemanthus pubescens Blanco Fl. Filip. (1837) 253, non Linn. f.= Crinum giganteum Blanco op. cit. ed. 2 (1845) 175; ed. 3, 1 (1877) 315, non Andr.=**CRINUM ASIATICUM** Linn.
CRINUM ASIATICUM Blanco op. cit. 251; 175; 314, *t. 168.*

Crinum asiaticum Linn. is exceedingly variable in size, depending on the age of the plant, its habitat, etc. It is common and widely distributed throughout the Philippines along the seashore. *Haemanthus pubescens* Blanco=*Crinum giganteum* Blanco, was correctly reduced by Naves in the Novissima Appendix to the third edition of Blanco's Flora de Filipinas. Naves, however, reduced *Crinum asiaticum* Blanco to *C. gracile* E. Mey., an endemic sylvan Philippine species. The description is short and imperfect, but from the fact that Blanco's material came from Mandaloyon near Manila, the probabilities are very great that he had merely a dwarfed form of the Linnean species; certainly not *C. gracile* E. Mey. It is universally known as *bacong* in the Philippines.

Illustrative specimen from Lamao, Bataan Province, Luzon, April, 1915 (*Merrill: Species Blancoanae No. 935*).

HYMENOCALLIS Salisbury

Pancratium illyricum Blanco Fl. Filip. (1837) 251 (*illiricum*); ed. 2 (1845) 176 (*illiricum*); ed. 3, 1 (1877) 316, *t. 411* (as *Hymenocallis adnata* Herb.), non Linn.=**HYMENOCALLIS LITTORALIS** (Jacq.) Salisb.
Pancratium maritimum Blanco Fl. Filip. (1837) 252; ed. 2 (1845) 177; ed. 3, 1 (1877) 316, non Linn.=? **HYMENOCALLIS LITTORALIS** (Jacq.) Salisb.

This species is very common in cultivation in the larger towns throughout the Philippines, but is scarcely naturalized, although occasionally found in waste places, about deserted dwellings, etc. The form described by Blanco as *Pancratium illyricum* was reduced by Naves to *Hymenocallis adnata* Herb., which is cited by Baker as a synonym of *H. littoralis*. The species was introduced into the Philippines, from Mexico, at an early date. As to *Pancratium maritimum* Blanco, whatever else it may be, it can scarcely be *Pancratium maritimum* Linn. The description is very short and imperfect, taken from specimens observed by him in cultivation in Batangas Province, Luzon. I strongly suspect it to have been *Hymenocallis littoralis* Salisb.

Illustrative specimen from Manila, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 128*).

EURYCLES Salisbury

Pancratium amboinense Linn.; Blanco Fl. Filip. (1837) 252; ed. 2 (1845) 177; ed. 3, 1 (1877) 317, *t. 406*=**EURYCLES AMBOINENSIS** (Linn.) Lindl.

This species is of local occurrence in the Philippines, growing in thickets and second-growth forests; it is also frequently cultivated for ornamental purposes. It is probably not a native of the Archipelago but of prehistoric introduction, but if introduced it is thoroughly naturalized.

Illustrative specimen from Maragondon, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 61*).

PANCRATIUM Linnaeus

PANCRATIUM ZEYLANICUM Linn.; Blanco Fl. Filip. (1837) 253; ed. 2 (1845) 177; ed. 3, 1 (1877) 317, *t. 321*.

The species was correctly interpreted by Blanco. It is of local occurrence in the Philippines, cultivated and as an escape in coconut plantations, etc. It is certainly an introduced species.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 378*).

HIPPEASTRUM Herbert

Amaryllis atamasco Blanco Fl. Filip. (1837) 254; ed. 2 (1845) 178; ed. 3, 1 (1877) 319, *t. 359*, non Linn.=**HIPPEASTRUM MINIATUM** Herb

This reduction was made by Naves and is apparently the correct disposition of the form that Blanco described. *Hippeastrum miniatum* Herb., at least as currently identified, still occurs in cultivation in the Philippines, but is nowhere abundant.

Illustrative specimen from cultivated plants, Manila, Luzon, May 1917 (*Merrill: Species Blancoanae No. 1048*).

POLIANTHES Linnaeus

POLIANTHES TUBEROSA Linn.; Blanco Fl. Filip. (1837) 259 (*Polyanthes*); ed. 2 (1845) 181; ed. 3, 1 (1877) 323.

This Linnean species was correctly interpreted by Blanco. It was introduced into the Philippines at an early date from Mexico and is still not uncommon in cultivation.

Illustrative specimen from Batangas, Batangas Province, Luzon, October, 1916, there known as *azucena* (*Merrill: Species Blancoanae No. 1038*).

AGAVE Linnaeus

Agave americana Blanco Fl. Filip. (1837) 258; ed. 2 (1845) 180; ed. 3, 1 (1877) 322, *t. 96*, non Linn.=**AGAVE CANTALA** Roxb.

This is the common maguey plant, introduced into the Philippines at an early date from Mexico, but described by Roxburgh

from specimens cultivated in India. Following Naves I previously considered it to be a form of *Agave rigida* Mill. Its proper name is apparently *Agave cantala* Roxb., although, so far as I know at present, this exact form has not been discovered in Mexico.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1916, there known as *maguey* (*Merrill: Species Blancoanae No. 1031*).

CURCULIGO Gaertner

Gethyllis acaulis Blanco Fl. Filip. (1837) 260 (*Gethillis*) (sp. nov.); ed. 2 (1845) 181; ed. 3, 1 (1877) 324=**CURCULIGO ORCHOIDES** Gaertn. (at least as interpreted in Hooker's Flora of British India).

This species was reduced by Naves to *Hypoxis franquevillei* Miq.=*H. aurea* Lour. In my previous paper on Blanco's species, through oversight, I indicated Loureiro's species as *Hypoxis flava*, instead of *H. aurea*, and considered F.-Villar's reduction as certainly correct. Blanco's description, however, is unmistakably that of a species of *Curculigo*, not *Hypoxis* in "Cor. [olla] superior, mui larga, con el tubo filiforme, macizo (y así en realidad no es tubo)" which refers to the long and slender beak or stipe extending far above the ovary and bearing the perianth. This species of *Curculigo* is widely distributed at low altitudes in the Philippines and has been recently found immediately north of Manila; Blanco's type was from Malinta, near Manila. It greatly resembles *Hypoxis aurea* in habit and is frequently confused with that species. *Hypoxis aurea* never occurs in the Philippines at low altitudes and is entirely unknown from the provinces near Manila.

Illustrative specimens from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 260*).

TACCACEAE

TACCA Forster

Tacca vesicaria Blanco Fl. Filip. (1837) 261 (sp. nov.)=**Tacca palmata** Blanco op. cit. ed. 2 (1845) 182 (nom. nov.); ed. 3, 1 (1877) 325=**TACCA PALMATA** Blume Enum. Pl. Jav. 1 (1827) 23.

Blanco was correct in reducing his *Tacca vesicaria* to *Tacca palmata* if he intended the latter to be Blume's species. However, there is no evidence that he intended his *Tacca palmata* to be *T. palmata* of Blume, as at the end of the description he adds "Espec. nueva." The species is widely distributed in the Philippines at low altitudes, occurring, especially in bamboo thickets. *Tacca rumphii* Schauer (1843), typified by Philippine material, is a synonym.

Illustrative specimen from near Fort William McKinley, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 154*).

Tacca gaogao Blanco Fl. Filip. (1837) 262; 856 (sp. nov.) = **TACCA PINNATIFIDA** Forst.; Blanco op. cit. ed. 2 (1845) 182; ed. 3, 1 (1877) 327.

Blanco was correct in reducing his *Tacca gaogao* to *Tacca pinnatifida* Forst. The species is widely distributed in the Philippines, especially near the seashore, and is locally abundant.

DIOSCOREACEAE

DIOSCOREA Linnaeus

DIOSCOREA DIVARICATA Blanco Fl. Filip. (1837) 797 (sp. nov.); ed. 2 (1845) 550; ed. 3, 3 (1879) 207.

This species is certainly a valid one, but was erroneously reduced by Naves to *Dioscorea batatas* Dcne., a species that does not extend to the Philippines. Blanco may have included in his description more than one species, as the Tagalog names *paquit* and *cobag* are applied today not only to the present form but also to *D. luzonensis* Schauer; however, Blanco's description does not apply to Schauer's species. The species discussed by Blanco following *D. divaricata* under the native names *cobag*, *cobag na quiroy*, and *cairoui* is *Dioscorea loheri* Prain & Burkill, which is commonly known in Rizal Province as *quiroi* and which differs from *D. divaricata* in the points mentioned by Blanco. The specimens of *D. divaricata*, distributed herewith, were from a plant having a spiny main stem, its tubers up to 2 m in length, 30 to 40 cm in diameter, edible, perpendicular or nearly so, and the top of the tuber frequently a meter below the surface of the ground, but often less, in all these characters agreeing with Blanco's description.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914; there known as *ubag* (*Merrill: Species Blancoanae No. 391*) (*Species Blancoanae No. 117* is *Dioscorea luzonensis* Schauer, which, as noted above, may have been included by Blanco in his description of *Dioscorea divaricata*).

Dioscorea sp. (*cobag, cobag na quiroi, cairoui*) Blanco Fl. Filip. (1837) 798; ed. 2 (1845) 550; ed. 3, 3 (1879) 206 = **DIOSCOREA LOHERI** Prain & Burkill.

This form differs from Blanco's description of *Dioscorea divaricata* in most of the points noted by him; stem with few spines, leaves smaller, and tubers smaller. In *D. loheri* the tubers are near the surface of the ground and scarcely more

than 2 to 3 cm in diameter, but Blanco states that they are sometimes situated up to three yards below the surface, probably by confusion with *D. divaricata*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914, there known as *quiroi* (*Merrill: Species Blancoanae No. 634*).

DIOSCOREA ALATA Linn.; Blanco Fl. Filip. (1837) 799; ed. 2 (1845) 550; ed. 3, 3 (1879) 207.

The Linnean species was correctly interpreted by Blanco. It is found in cultivation throughout the Archipelago at low and medium altitudes, but never wild. It is certainly not a native of the Philippines, but undoubtedly of prehistoric introduction. While the vegetative and floral characters are quite constant, the tubers vary enormously in shape, size, and in the color of the flesh. In shape the tubers vary from cylindric to oblong, often flattened, and frequently lobed. In color the flesh varies from purple to white. Tubers may be small in size, or sometimes attain a weight of 15 kilos or perhaps more. Its universal Tagalog name is *ubi*.

Illustrative specimens from Lamao, Bataan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 810*); Antipolo, Rizal Province, Luzon, November, 1915 (*Merrill: Species Blancoanae No. 922*).

Dioscorea papillaris Blanco Fl. Filip. (1837) 801 (*pappillaris*) (sp. nov.); ed. 2 (1845) 552; ed. 3, 3 (1879) 210=**DIOSCOREA ESCULENTA** (Lour.) Burkill [*D. aculeata* Linn. var. *tiliaefolia* (Kunth) Prain & Burkill in Journ. As. Soc. Beng. N. S. 10 (1914) 20].

This species was reduced by Naves to *Dioscorea sativa* Linn., a species that does not extend to the Philippines. My interpretation of it is not in full agreement with Blanco's description, as the tubers are obovoid rather than "de figura de maza," the petioles are not short, nor are they winged in the upper part. However, this form appears several times in our collections under the Tagalog name *tongo*, cited by Blanco, and otherwise agrees with his description. The largest tuber I have seen was about 25 cm in length, but it is said by the Filipinos sometimes to be twice as large. The tuber is edible and is protected by a crown of very spiny modified roots up to 25 cm in length.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, there known as *tongo* (*Merrill: Species Blancoanae No. 677*).

Dioscorea tugui Blanco Fl. Filip. (1837) 800 (sp. nov.) = **Dioscorea sativa** Blanco op. cit. ed. 2 (1845) 551; ed. 3, 3 (1879) 209, non Linn. = **DIOSCOREA ESCULENTA** (Lour.) Burkill [*D. aculeata* Linn. var. *tiliaefolia* (Kunth) Prain & Burkill, *D. tiliaefolia* Kunth].

This species is very common in the Philippines and is of wide distribution at low altitudes. It was reduced by Naves to *Dioscorea fasciculata* Roxb., but Roxburgh's species is considered by Prain & Burkill as merely a variety of *D. aculeata;* i. e., *D. esculenta* (Lour.) Burkill. *Dioscorea tugui* Blanco is the wild form and is characterized by the production of a crown of very spiny modified roots above the tubers; a cultivated form that is found in the Philippines cannot be distinguished from this wild form in any character except that the spiny modified roots are lacking.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 202*).

Dioscorea triphylla Blanco Fl. Filip. (1837) 799; ed. 2 (1845) 551; ed. 3, 3 (1879) 208, non Linn. = **DIOSCOREA HISPIDA** Dennst. (*D. daemona* Roxb.).

This is *Dioscorea triphylla* Linn. in Stickman Herb. Amb. (1754) 23 as typified by *Ubium sylvestre* Rumph. Herb. Amb. 5: *t. 128.* It is not *Dioscorea triphylla* Linn. Sp. Pl. (1753) 1032; for the synonymy see Prain & Burkill in Journ. As. Soc. Beng. N. S. 10 (1914) 25. It is common and widely distributed in the Philippines at low and medium altitudes. The tubers are large, and after the poisonous principle is dissipated by long washing in running water they are much used as food. Tagalog, *náme;* Ilocano and Visayan, *corót.*

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 90*).

DIOSCOREA PENTAPHYLLA Linn.; Blanco Fl. Filip. (1837) 802; ed. 2 (1845) 552; ed. 3, 3 (1879) 210.

The plant Blanco described is manifestly a form of the Linnean species and is referable to the var. *malaica* Prain & Burkill in Journ. As. Soc. Beng. N. S. 10 (1914) 23. It is common about Manila and seems to be widely distributed in the Philippines, growing in thickets at low altitudes, but is not cultivated. It rarely produces flowers in the Philippines, but very generally produces bulbils. The Tagalog name is *lima-lima,* "limá" meaning five, from the number of leaflets.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 458*).

IRIDACEAE

ELEUTHERINE Herbert

Antholyza meriana Blanco Fl. Filip. (1837) 24 (*Antholiza*); ed. 2 (1845) 18; ed. 3, 1 (1877) 33, *t. 100*, non Linn.=**ELEUTHERINE PALMIFOLIA** (Linn.) Merr. (*E. plicata* Herb.).

This was placed by Naves under *Sisyrinchium palmifolium* Linn., which, as I interpret it, is the same as *Eleutherine plicata* Herb. The species is occasionally found in cultivation in the Philippines, having been introduced from tropical America at an early date. In some regions it is naturalized and is locally abundant.

Illustrative specimen from Tacloban, Leyte, *comm. Felix Franco*, locally known as *hagusahis*, October, 1916 (*Merrill: Species Blancoanae No. 1034*).

MUSACEAE

MUSA Linnaeus

Blanco described eighteen varieties of the banana, all but four being placed under *Musa paradisiaca* Linn., these four being erroneously placed under *Musa troglodytarum* Linn. He states that fifty-seven varieties of the banana were known from the Philippines, this statement apparently being taken from Delgado (Hist. Filip., 553–560). The forms placed under *Musa troglodytarum* Linn. apparently represent three or four distinct species: *Musa textilis* Née, the abacá plant; *Musa glauca* Roxb., a nonsoboliferous banana, the only one of this type known from the Philippines; and *Musa errans* (Blanco) Teodoro. Those placed under *Musa paradisiaca* Linn. are in part cultural forms and varieties of this species, in part varieties of *Musa sapientum* Linn. The probabilities are very great that most of the forms of the ordinary banana described by Blanco are also to be found in cultivation in other parts of Malaya and in India, but without comprehensive collections of living plants for purposes of comparison, it is impossible definitely to refer named Philippine forms to named extra-Philippine ones. In the following consideration I have closely followed Teodoro's rather intensive study of Philippine bananas in Philip. Journ. Sci. **10** (1915) Bot. 379–421, *t. 7–18*, who has given detailed descriptions and excellent figures of the flowers and fruits of many of the forms Blanco described.

Musa troglodytarum Linn. **var. dolioliformis** Blanco Fl. Filip. (1837) 855 (var. nov.); ed. 2 (1845) 174; ed. 3, 1 (1877) 312=**MUSA GLAUCA** Roxb.

There is little doubt that this remarkably distinct form is

the same as *Musa glauca* Roxb., judging from Roxburgh's figure and description. The Philippine plant is of large size, 3 to 4 m high, the basal part usually much swollen, and produces no suckers, the plant dying after flowering. The infructescence is pendulous, up to 80 cm long and 30 cm in diameter, the large and conspicuous bracts are imbricate, persistent, and quite cover the fruits. The fruits are oblong-obovoid, irregularly and slightly 3-angled, angles rounded, green, glaucous, with faint longitudinal veins, 9 to 11 cm long, 3.5 to 4 cm in diameter, obtuse, sessile, narrowed below, the pericarp about 1.5 mm thick, the pulp very scanty, white, inedible, the seeds large, globose, black, about 12 mm in diameter. See Philip. Agr. Review 6 (1913) No. 9, *t. 1* for a photographic reproduction of the habit of this species there characterized as "an unidentified wild species."

Illustrative specimens from Cavite Province, Luzon, September, 1913, there known as *virgen*, the same native name that Blanco cites (*Merrill: Species Blancoanae Nos. 537, 946*).

Musa troglodytarum Linn. **var. textoria** Blanco Fl. Filip. (1837) 247 (var. nov.); ed. 2 (1845) 173; ed. 3, 1 (1877) 311=**MUSA TEXTILIS** Née (*M. abaca* Perr.).

This species presents considerable variation, is widely distributed in the Philippines, and in many provinces and islands is extensively cultivated for its fiber, *abacá* or Manila hemp of commerce. Commercially this fiber is one of the most important products of the Philippines. See Teodoro in Philip. Jour. Sci. 10 (1915) Bot. 388, *t. 18, f. 6–10,* for a detailed description, with figures.

Illustrative specimen from cultivated specimens, Mount Maquiling, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 653*).

Musa troglodytarum Linn. **var. errans** Blanco Fl. Filip. (1837) 247 (var. nov.); ed. 2 (1845) 172; ed. 3, 1 (1877) 310=**MUSA ERRANS** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 390, *t. 17, f. 6–8.*

This was reduced by Naves to *Musa amboinensis* "Rumph.," which is certainly incorrect, while I previously expressed the opinion that it was certainly a form or variety of *Musa textilis* Née. I am now of the opinion that it is probably a distinct species, following Teodoro who has raised Blanco's variety to specific rank. It is the common wild sylvan banana in the forests of the provinces near Manila, the Tagalog name *saguing maching* meaning monkey banana.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, there known as *saguing maching* (*Merrill: Species Blancoanae No. 873*).

Musa troglodytarum Blanco Fl. Filip. (1837) 246; ed. 2 (1845) 172; ed. 3, 1 (1877) 310, *t. 89*, non Linn.=**MUSA ERRANS** (Blanco) Teodoro var. **BOTOAN** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 391, *t. 7, f. 5–10.*

This is one of the commonest bananas found in cultivation in the Philippines. The fruit contains many seeds, is edible, and is green when mature.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914, there known as *butuan* (*Merrill: Species Blancoanae No. 217*).

Musa paradisiaca Linn. var. **cinerea** Blanco Fl. Filip. (1837) 250 (var. nov.); ed. 2 (1845) 175; ed. 3, 1 (1877) 313=**MUSA SAPIENTUM** Linn. var. **CINEREA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 397, *t. 13, f. 1–5.*

This is one of the most commonly cultivated bananas in the Philippines, and the fruit is to be found in the market at all seasons. It is rather inferior, with a thin yellow skin, and firm subacid flesh. Blanco states that it was introduced into the Philippines by Mr. Letondal. See Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 397, *t. 13, f. 1–5*, for a detailed description of it.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, June, 1915, there known as *latundan* (*Merrill: Species Blancoanae No. 926*).

Musa paradisiaca Linn. var. **violacea** Blanco Fl. Filip. (1837) 245 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 307=**MUSA SAPIENTUM** Linn. var. **VIOLACEA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 398, *t. 5, f. 6–10.*

This is one of the edible bananas, of which Teodoro has given a detailed description, with figures, l. c.

Musa paradisiaca Linn. var. **glaberrima** Blanco Fl. Filip. (1837) 245 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 308=**MUSA SAPIENTUM** Linn. var. **GLABERRIMA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 399, *t. 15, f. 1–5.*

The identification of the specimen cited below with Blanco's variety is made chiefly from the native name, but the material agrees with his description as far as it goes.

Illustrative specimen from Batangas Province, Luzon, February, 1915, there known as *galamai señora* (*Merrill: Species Blancoanae No. 865*).

Musa paradisiaca Linn. var. **suaveolens** Blanco Fl. Filip. (1837) 244 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 306=**MUSA SAPIENTUM** Linn. var. **SUAVEOLENS** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 400, *t. 14, f. 6–10.*

The *buñgulan* is one of the most delicious bananas found in cultivation in the Philippines and is one of the most highly

prized varieties. The fruit is green or yellowish-green when mature, while the flesh is soft and has a very delicate flavor. It is identical with the most commonly cultivated form in Kwangtung Province, China.

Illustrative specimen from Antipolo, Rizal Province, Luzon, June, 1915, from cultivated plants, there known as *buñgulan* (*Merrill: Species Blancoanae No. 928*).

Musa paradisiaca Linn. var. **glauca** Blanco Fl. Filip. (1837) 250 (var. nov.); ed. 2 (1845) 175; ed. 3, 1 (1877) 312=**MUSA SAPIENTUM** Linn. var. **GLAUCA** (Blanco) Teodoro in Philip. Journ. Sci. **10** (1915) Bot. 402, *t. 9, f. 6–10.*

This banana is very similar to the form described by Blanco as *Musa paradisiaca* Linn. var. *cinerea* Blanco, locally known as *letondal* or *letondan*, and is apparently only a slight variant of that form.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, July 18, 1916, there known as *veinte cohol* (*Merrill: Species Blancoanae No. 912*).

Musa paradisiaca Linn. var. **ternatensis** Blanco Fl. Filip. (1837) 243 (var. nov.); ed. 2 (1845) 170; ed. 3, 1 (1877) 305=**MUSA SAPIENTUM** Linn. var. **TERNATENSIS** (Blanco) Teodoro in Philip. Journ. Sci. **10** (1915) Bot. 404, *t. 7, f. 1–5.*

This is one of the cultivated forms of *Musa paradisiaca* Linn. subsp. *sapientum* (Linn.) O. Ktze., the fruits yellow when mature, seedless, the pulp well flavored.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1915, there known as *gloria* (*Merrill: Species Blancoanae No. 216*).

Musa paradisiaca Linn var. **lacatan** Blanco Fl. Filip. (1837) 243 (var. nov.); ed. 2 (1845) 170; ed. 3, 1 (1877) 305, *t. 88*=**MUSA SAPIENTUM** Linn. var. **LACATAN** Teodoro in Philip. Journ. Sci. **10** (1915) Bot. 405, *t. 11, f. 1–5.*

This is one of the most desirable eating bananas in the Philippines and is commonly known as *lacatan.*

Musa paradisiaca Linn. var. **ulnaris** Blanco Fl. Filip. (1837) 246 (var. nov.); ed. 2 (1845) 172; ed. 3, 1 (1877) 309.

A purely imaginary banana, of which Blanco saw no material. He described it from hearsay, the fruits as being as thick as the "pantorilla" (calf of the leg) and attaining a length of a "braza" (about six feet). The probabilities are that Blanco's informant was trying to describe the form commonly known as *tundoc* or *tuldoc*, which has unusually large fruits.

Musa paradisiaca Linn. var. **tombak** Blanco Fl. Filip. (1837) 246 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 307=**MUSA SAPIENTUM** Linn. var. **TOMBAK** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 407, *t. 10, f. 1–5*.

This form, very imperfectly described by Blanco, is one of the cultivated varieties of the common banana. The identification has been made chiefly from the Tagalog name, *tinumbaga*.

Illustrative specimen from cultivated plants, Antipolo, Rizal Province, Luzon, June, 1915, there known as *tinumbaga* or *durogo* (*Merrill: Species Blancoanae No. 953*).

Musa paradisiaca Linn. var. **longa** Blanco Fl. Filip. (1837) 245 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 308=**MUSA SAPIENTUM** Linn. var. **LONGA** (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 407.

One of the edible bananas, known only from Blanco's description.

Musa paradisiaca Linn. var. **compressa** Blanco Fl. Filip. (1837) 240 (var. nov.); ed. 2 (1845) 168; ed. 3, 1 (1877) 304=**MUSA SAPIENTUM** Linn. var. **COMPRESSA** Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 408, *t. 7, f. 1–5*.

It is impossible to determine the exact status of this variety from any existing monograph. It is one of the commonest and most widely distributed forms in the Philippines, as it thrives with little or no cultivation; it does not, however, occur wild. The fruits are yellowish when mature, rather thick skinned, and the pulp is rather inferior in flavor.

Illustrative specimen from Antipolo, Rizal Province, Luzon, March, 1915, there known as *sabá* (*Merrill: Species Blancoanae No. 868*).

Musa paradisiaca Linn. var. **pumila** Blanco Fl. Filip. (1837) 244 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 306=**MUSA SAPIENTUM** Linn. var. [*M. cavendishii* Lamb. var. *pumila* (Blanco) Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 412].

This banana was characterized by Blanco as being similar in fruit characters to the *buñgulan*, but differing in having a less palatable fruit and in being dwarfed in size. It is one of the cultivated forms of the common banana.

Illustrative specimen from San Mateo, Rizal Province, Luzon, June, 1915, from cultivated plants, there known as *tampohin* (*Merrill: Species Blancoanae No. 943*).

MUSA PARADISIACA Linn. var. **MAGNA** Blanco Fl. Filip. (1837) 244 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 307.

A form of *Musa paradisiaca* Linn. as that species is currently interpreted, producing very large fruits up to a foot in length, commonly known as *tundoc*.

MUSA PARADISIACA Linn. var. **SUBRUBEA** Blanco Fl. Filip. (1837) 245 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 307.

A form of *Musa paradisiaca* Linn. as that species is currently interpreted. See Teodoro in Philip. Journ. Sci. 10 (1915) Bot. 414, *t. 16, f. 1–5,* for a detailed description of it.

MUSA PARADISIACA Linn. var. **MAXIMA** Blanco Fl. Filip. (1837) 245 (var. nov.); ed. 2 (1845) 171; ed. 3, 1 (1877) 308.

This is very poorly characterized by Blanco as one of the bananas with very large fruits of poor flavor. The identification has been made largely from the native name. One of the cultivated forms of the common banana.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, June, 1915, there known as *batavia* or *matavia* (*Merrill: Species Blancoanae No. 920*).

ZINGIBERACEAE

CURCUMA Linnaeus

CURCUMA LONGA Linn.; Blanco Fl. Filip. (1837) 5; ed. 2 (1845) 4; ed. 3, 1 (1877) 6, *t. 3* (as *Costus luteus* Blanco).

The Linnean species was correctly interpreted by Blanco. It is widely distributed in the settled areas of the Philippines and is locally abundant. Turmeric is commonly and widely known in the Philippines as *dilao* or *dulao,* this word merely meaning yellow, from the fact that the rhizomes yield a yellow dye. The plant is certainly not a native of the Philippines, but one of prehistoric introduction from Asia or Malaya.

Illustrative specimen from Antipolo, Rizal Province, Luzon, September, 1915, there known as *dilao* (*Merrill: Species Blancoanae No. 917*).

Costus nigricans Blanco Fl. Filip. (1837) 3 (sp. nov.); ed. 2 (1845) 3; ed. 3, 1 (1877) 5=**CURCUMA ZEDOARIA** (Berg.) Rosc.

This species is widely distributed in the Philippines in the settled areas, occurring chiefly in the vicinity of towns. It is never cultivated, but nevertheless is certainly a purposely introduced plant in the Archipelago. It is locally very abundant. *Costus nigricans* Blanco is the whole basis of *Roscoea nigrociliata* Hassk. in Flora **47** (1864) 21, Hasskarl's name thus becoming a synonym of *Curcuma zedoaria* Rosc.

From this species I have not been able to separate **Costus luteus** Blanco op. cit. 4 (sp. nov.); 3; 6, on which *Roscoea lutea* Hassk. in Flora **47** (1864) 21 was based. Blanco's description is very short and imperfect, practically merely stating that *Costus luteus* differs from *C. nigricans* only in that its rhizomes are yellow,

that the leaves lack the dark-colored median spot, and that the rhizomes yield a yellow dye. I consider it very probable that it too is but a synonym of *Curcuma zedoaria* Rosc.

Illustrative specimen from Antipolo, Rizal Province, Luzon, June, 1915, here known as *tamo* and as *barac*, the former cited by Blanco as one of the native names of *Costus luteus*, the latter as one of the native names of *C. nigricans* (*Merrill: Species Blancoanae No. 966*).

KAEMPFERIA Linnaeus

Kaempferia rotunda Blanco Fl. Filip. (1837) 5; ed. 2 (1845) 4 (*Kaempheria*); ed. 3, 1 (1877) 7, non Linn.=**KAEMPFERIA GALANGA** Linn.

This species is widely distributed; it is of local occurrence in the settled areas of the Philippines at low and medium altitudes, but was certainly introduced into the Archipelago in prehistoric times; it is not a native of the islands.

Illustrative specimen from Antipolo, Rizal Province, Luzon, August, 1915, here known as *duso* or *dusol* (*Merrill: Species Blancoanae No. 942*).

KOLOWRATIA Presl

Renealmia gracilis Blanco Fl. Filip. (1837) 1 (sp. nov.)=**Renealmia exaltata** Blanco op. cit. ed. 2 (1845) 1; ed. 3, 1 (1877) 2, *t. 1*, non Linn. f.=**KOLOWRATIA ELEGANS** Presl (*Alpinia gracilis* Rolfe, *Alpinia elegans* K. Sch.).

This species is common and widely distributed in the Philippines at low and medium altitudes, and is exceedingly variable in leaf size. Its most common native names are *talbac* or *tagbac*. It was erroneously reduced by Naves to *Alpinia gigantea* Blume, a species that does not occur in the Philippines. Blanco's description typifies *Hellenia gracilis* Hassk. in Flora 47 (1864) 19.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 404*).

ZINGIBER Adanson

Amomum zingiber Linn.; Blanco Fl. Filip. (1837) 2; ed. 2 (1845) 2; ed. 3, 1 (1877) 3, *t. 131*=**ZINGIBER OFFICINALE** Rosc.

Blanco correctly interpreted the Linnean species, the form being the ordinary ginger which is cultivated in and about the larger towns of the Philippines to supply the local demand. Blanco's description typifies *Zingiber blancoi* Hassk. in Flora 47 (1864) 20.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1024*).

Amomum zerumbet Linn.; Blanco Fl. Filip. (1837) 2; ed. 2 (1845) 2; ed. 3, 1 (1877) 3, *t. 370* (as *Z. cassumunar* Roxb.) = **ZINGIBER ZERUMBET** (Linn.) Rosc.

This is common and widely distributed in the Philippines, occurring in settled areas at low and medium altitudes. It is apparently an introduced plant in the Archipelago.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 592*).

AMOMUM Linnaeus

Amomum echinatum Blanco Fl. Filip. ed. 2 (1845) 3; ed. 3, 1 (1877) 4, non Willd. = **AMOMUM PROPINQUUM** Ridley.

Naves considered that the form Blanco described was referable to *Amomum aculeatum* Roxb. var. *majus*, in which he was certainly in error, as Roxburgh's species does not extend to the Philippines. While Blanco's description is very imperfect, and he considers only the fruits, his species is unquestionably the Philippine form that Ridley has described as *Amomum propinquum*. It is of local occurrence but of rather wide distribution in the Philippines at low and medium altitudes.

Illustrative specimen from Batangas Province, Luzon, April, 1915 (*Merrill: Species Blancoanae No. 925*).

GLOBBA Linnaeus

GLOBBA MARANTINA Linn.; Llanos Frag. Pl. Filip. (1851) 7; F.-Vill. and Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 2, *t. 351*.

The Linnean species was correctly interpreted by Llanos. It is locally abundant at low altitudes in the settled areas of the Philippines, but is certainly not a native of the Archipelago. It flowers freely, but also usually produces numerous bulbils.

Illustrative specimen from Antipolo, Rizal Province, Luzon, August, 1915 (*Merrill: Species Blancoanae No. 941*).

CANNACEAE

CANNA Linnaeus

CANNA INDICA Linn.; Blanco Fl. Filip. (1837) 6; ed. 2 (1845) 5; ed. 3, 1 (1877) 8, *t. 4*.

The Linnean species was apparently correctly interpreted by Blanco. It was undoubtedly introduced from Mexico by the Spaniards, but is now common and widely distributed in the Philippines at low and medium altitudes in the settled areas. Its most common native (Tagalog) name is *ticas-ticas*.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 47*).

MARANTACEAE

DONAX Loureiro

Maranta arundinacea Blanco Fl. Filip. (1837) 7; ed. 2 (1845) 5; ed. 3, 1 (1877) 9, *t. 5*, non Linn.=**DONAX CANNIFORMIS** (Forst. f.) K. Sch. in Engl. Bot. Jahrb. 15 (1893) 440; Rolfe in Journ. Bot. 45 (1907) 243 (*Thalia cannaeformis* Forst. f., *Actoplanes cannaeformis* K. Sch., *Donax arundastrum* K. Sch. quoad Philippinense, non Lour.).

This is very common and widely distributed in the Philippines, in ravines along small streams in thickets and forests.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 279*).

ORCHIDACEAE

HABENARIA Willdenow

Thelymitra malintana Blanco Fl. Filip. (1837) 642; ed. 2 (1845) 447; ed. 3, 3 (1879) 40=**HABENARIA MALINTANA** (Blanco) comb. nov.

Blanco's species was reduced by Naves to *Habenaria trinervia* Wight, a species that does not extend to the Philippines and one to which his description does not apply. *Thelymitra malintana* is, however, a species of *Habenaria* and is identical with *Habenaria pelorioides* Par. & Reichb. f. (1874), or at least with the Philippine material referred here by Mr. Ames. Blanco's name is much the earlier and should be adopted, especially in view of the fact that there is absolutely no doubt as to the identity of his species. The type was from Malinta, a short distance from Manila, and the species still grows in the vicinity of Manila.

Illustrative specimen from Obando, Bulacan Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 629*).

VANILLA Swartz

Epidendrum vanilla Blanco Fl. Filip. (1837) 643 (*vainilla*), non Linn.=**VANILLA OVALIS** Blanco op. cit. ed. 2 (1845) 448 (sp. nov.); ed. 3, 3 (1879) 42.

Vanilla majaijensis Blanco op. cit. ed. 2 (1845) 593 (sp. nov.); ed 3, 3 (1879) 43=**VANILLA OVALIS** Blanco.

Vanilla philippinensis Rolfe is undoubtedly a synonym of Blanco's *Vanilla ovalis*, and there is no valid reason why Blanco's name should not be maintained. The species is common in parts of Laguna Province, Luzon (Mount Maquiling and Mount Banajao), growing along streams in narrow valleys. *Vanilla ovalis* Blanco was erroneously reduced by Naves to *V. aromatica* Sw., while *V. majaijensis* Blanco was by the same author reduced to *V. planifolia* Ait., both manifestly incorrect reductions. Both of Blanco's descriptions are imperfect and incomplete, but

there is no reason for considering that more than one species is represented; in fact the description of *V. majaijensis* was inserted in the second edition of the Flora de Filipinas after Blanco's death, having been found among his papers, and may not have been intended by him for publication. See Flora de Filipinas ed. 2 (1845) p. 589.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 665*).

OBERONIA Lindley

Cymbidium flavescens Llanos Frag. Pl. Filip. (1851) 96 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 74=? **OBERONIA IRIDIFOLIA** Lindl.

Naves reduced this to *Cleisostoma amabile* T. & B., with which Llanos's description presents nothing in common. It is possibly the same as *Oberonia iridifolia* Lindl.; at least this species conforms best with the description among all the low-country epiphytic orchids known to me. Llanos's specimens were from San Isidro, Bulacan Province, Luzon, where the plants grew on old bamboos.

GEODORUM Jackson

Arethusa glutinosa Blanco Fl. Filip. (1837) 641 (sp. nov.); ed. 2 (1845) 446; ed. 3, 3 (1879) 38, *t. 429 bis*=**GEODORUM NUTANS** (Presl) Ames (*G. semicristatum* Lindl.).

This species is common and widely distributed in the Philippines, growing in thickets and open places at low altitudes. There is no doubt as to the identity of Blanco's species, but Presl's specific name is the older.

Illustrative specimen from near Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 511*).

DENDROBIUM Swartz

Epidendrum equitans Blanco Fl. Filip. (1837) 645 (sp. nov.); ed. 2 (1845) 449; ed. 3, 3 (1879) 44 (non *Dendrobium equitans* Kränzl.)=**DENDROBIUM APOROIDES** (Lindl.) comb. nov. (*Eria aporoides* Lindl., *Dendrobium brongniartianum* Kränzl.).

The reduction of Blanco's species to *Eria aporoides* Lindl. was made by Naves, which, as *Dendrobium aporoides*, is the correct disposition of it. Blanco's description is excellent and among all known Philippine orchids applies only to this one, which, moreover, is common and widely distributed in the Archipelago. Blanco's specific name, the oldest one for the species, is invalidated in *Dendrobium* by the entirely different *Dendrobium equitans* Kränzl.

Illustrative specimen from Rizal Province, Luzon, September, 1916 (*Merrill: Species Blancoanae No. 1023*).

Epidendrum ruibarbarum redolens Blanco Fl. Filip. ed. 2 (1845) 593 (sp. nov.); ed. 3, 3 (1879) 45, *t. 389* (*rhabarbarum redolens*) = **DENDROBIUM ANOSMUM** Lindl. (*D. superbum* Reichb. f.).

DENDROBIUM RETUSUM Llanos in Mem. Acad. Cienc. Madr. 2 (1859) 498 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 100 = ? **DENDROBIUM ANOSMUM** Lindl.

This species is of local occurrence in the Philippines at medium altitudes and is brought into Manila in considerable quantities in March and April of each year, its period of anthesis, for sale. I have followed J. J. Smith in accepting Lindley's specific name, *Dendrobium anosmum* Lindl. having been reduced by Reichenbach f. to *D. superbum* Reichb. f. as a variety. Blanco's barbaric name is much older than *Dendrobium superbum* Reichb. f., the older *Dendrobium macrophyllum* Lindl. and *D. macranthum* Hook. being invalid in the genus, and was published in the same year as *D. anosmum* Lindl. The reduction of *Dendrobium retusum* Llanos merely follows Naves's disposition of it, who placed it as a synonym of *D. macrophyllum*. Llanos's description is entirely inadequate.

GRAMMATOPHYLLUM Blume

Ophyrs cernua Blanco Fl. Filip. (1837) 639 (*Ophiris*); ed. 2 (1845) 445; ed. 3, 3 (1879) 35, *t. 276*, non Linn. = **GRAMMATOPHYLLUM MULTIFLORUM** Lindl.

Blanco's species was reduced by F.-Villar to *Grammatophyllum scriptum* Blume, which while certainly correct as to the genus, is as certainly wrong as to the species, as Blume's species does not grow in the region from which Blanco secured his specimens. There is no doubt in my mind that the form Blanco described as *Ophyrs cernua* is *Grammatophyllum multiflorum* Lindl., this being the only species of the genus whose known distribution agrees with Blanco's plant as to locality.

Illustrative specimen from Sorsogon Province, Luzon, August, 1915 (*Merrill: Species Blancoanae No. 930*).

LUISIA Gaudichaud

Dendrobium teres Blanco Fl. Filip. (1837) 638 non Roxb. = **Dendrobium teretifolium** Blanco Fl. Filip. ed. 2 (1845) 444; ed. 3, 3 (1879) 34, non R. Br. = **LUISIA sp.**

Blanco's species was reduced by Naves to *Luisia teretifolia* Gaudich., but in the uncertain status of the various species of *Luisia*, this may or may not be correct. As to the genus, however, there is absolutely no doubt, for among all the Philippine

orchids Blanco's description applies unmistakably to *Luisia*. His material was from Angat, Bulacan Province, Luzon.

Illustrative specimen from Calumpit, Bulacan Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 945*).

PHALAENOPSIS Blume

PHALAENOPSIS AMABILIS Blume; Blanco Fl. Filip. ed. 2 (1845) 592 (*Phalenopsis amabile*); ed. 3, 3 (1879) 41.

The form Blanco described was doubtless the one that was described from Philippine material as *Phalaenopsis aphrodite* Reichb. f. It does not appear to be specifically distinct from Blume's species.

SARCANTHUS Lindley

Cypripedium lineari-subulatum Llanos Frag. Pl. Filip. (1851) 99 (sp. nov.); F.-Vill. & Naves in Blanco F. Filip. ed. 3, 4 (1880) 76 = **SARCANTHUS DEALBATUS** (Lindl.) Reichb. f.

Llanos's description, although fairly long, is exceedingly unsatisfactory, and, in considering the species, Naves, Novis. App. (1880) 251, retains it under *Cypripedium* with the following statement: "valde dubium, ex descriptione potius *Cleisostoma longifolium* Teysm. et Binnend. nondum rite observavi." From the description alone it is absolutely impossible to interpret the species. A botanical exploration of the region about Calumpit has yielded but three species of orchids so far, and among them the species distributed herewith which agrees with Llanos's description as to habitat (on mango trees), as to size and characters of the leaves, and, at least in part, with the description of the stems, inflorescence, flowers, and fruits. I have absolutely no doubt that *Sarcanthus dealbatus* is the species Llanos attempted to describe. The species, although not common, is widely distributed in the Philippines at low altitudes, extending from central Luzon to southern Mindanao.

Illustrative specimen from San Miguel, near Calumpit, Bulacan Province, Luzon, January, 1915, growing on mango trees (*Merrill: Species Blancoanae No. 774*).

CLEISOSTOMA Blume

Epidendrum lineare Blanco Fl. Filip. (1837) 644; ed. 2 (1845) 449; ed. 3, 3 (1879) 44, non Linn. = **CLEISOSTOMA BICOLOR** Lindl. & Paxt.

Naves reduced this to *Cleisostoma ionosmum* Lindl., but Blanco's description conforms much more closely to *C. bicolor* Lindl. & Paxt. than to the former; the latter is, moreover, common and widely distributed in the regions from which Blanco secured his botanical material and is an orchid that he scarcely would have overlooked, while the former is apparently rare.

Illustrative specimen from Rizal Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1020*).

AERIDES Loureiro

Aerides maculatum Llanos Frag. Pl. Filip. (1851) 93 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 72, *t. 409*, non Buch.-Ham=**AERIDES QUINQUEVULNERA** Lindl.

Naves reduced *Aerides maculatum* Llanos to *Vanda lissochiloides* Lindl.=*Vandopsis lissochiloides* Pfitz., manifestly an impossible reduction, although *Vandopsis lissochiloides* Pfitz. grows in the Philippines. Llanos's description does not apply to *Vandopsis lissochiloides* in any particular and is certainly an *Aerides*, identical with *A. quinquevulnera* Lindl. This species is of wide distribution at low and medium altitudes in Luzon; it is one of the few orchids to be found in Calumpit, the locality where Llanos secured the specimens he described.

Illustrative specimen (a topotype) from Calumpit, Bulacan Province, Luzon, January, 1915, growing on mango trees (*Merrill: Species Blancoanae No. 789*).

TRICHOGLOTTIS Blume

Synptera subviolacea Llanos Frag. Pl. Filip. (1851) 98 (gen. et. sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 75, *t. 348* (as *T. rigida* Blume)=**TRICHOGLOTTIS SUBVIOLACEA** (Llanos) **comb. nov.** (***Trichoglottis bataanensis* Ames**).

This genus and species was reduced by Naves to *Trichoglottis retusa* Bl., which, although it occurs in the Philippines, does not at all agree with Llanos's description. In Index Kewensis it is reduced to *Cleisostoma subviolaceum* Reichb. f., a species based on Philippine material but published with no reference whatever to Llanos's *Synptera subviolacea*, while the two descriptions apply to very different species. Llanos's specimens were from Calumpit, a town at sea level a short distance north of Manila and a region very poor in orchids. *Trichoglottis bataanensis* Ames is the only species known to me that occurs at low altitudes in regions like Calumpit that at all agrees with Llanos's description. The description is vague and imperfect, but is manifestly that of a *Cleisostoma*. The leaves are not "aovadas," but this term is modified by Llanos by the addition "alargadas;" otherwise the description applies very closely, and as *Trichoglottis bataanensis* Ames is widely distributed at low altitudes in central Luzon, there is every reason to believe that this is the species that Llanos intended.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 733*).

RHYNCHOSTYLIS Blume

Orchis lanigera Blanco Fl. Filip. (1837) 641 (sp. nov.); ed. 2 (1845) 446; ed. 3, 3 (1879) 37=**RYNCHOSTYLIS RETUSA** Blume.

This was reduced by Naves to *Aerides virens* Lindl. where it certainly does not belong. The country of origin of Lindley's species is unknown, but there is no reason for considering that it was Philippine. Blanco's description applies very closely to *Rynchostylis retusa* Blume, a species of wide distribution in the regions from which he received most of his botanical material. *Orchis lanigera* Blanco is not included in Index Kewensis; the specific name was not from any pubescent character of the plant but from the "especie de lana algo áspera" inside the capsules.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, September, 1916 (*Merrill: Species Blancoanae No. 1030*).

ORCHIDACEAE OF UNCERTAIN STATUS

Cypripedium bulbosum Blanco Fl. Filip. (1837) 637; ed. 2 (1845) 444; ed. 3, 3 (1879) 33, non Linn.=*Orchidaceae* indet.

Blanco's description is so exceedingly indefinite that I cannot suggest a definite reduction of the form he erroneously ascribed to *Cypripedium bulbosum* Linn. He may have seen some species of *Cestichis* or *Malaxis*. The form he described is certainly no *Eulophia*, although Naves referred it to *Eulophia sumatrana* Blume.

Pelexia ? falcata Llanos Frag. Pl. Filip. (1851) 95; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 73=*Orchidaceae* indet.

Naves reduced this to the Australian *Phreatia limenophylax* Benth. with which Llanos's description has nothing in common. The description may apply to *Oberonia*, but beyond this I can make no suggestion as to the identity of the plant described. The description is very imperfect.

Gongora philippica Llanos in Mem. Acad. Cienc. Madr. 2 (1859) 498 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 100.

The entire description is as follows: "species mihi videtur novissima. Habitat epiphyta in montibus Angat. Sepalis internè violaceis: labello albo-violaceo; foliis ovatis apice retusis mucronatisque. Planta speciosissima." Naves reduced it to *Renanthera coccinea* Lour., which, at least as to the species, is certainly a wrong disposition of it.

DICOTYLEDONS

CASUARINACEAE

CASUARINA Linnaeus

CASUARINA EQUISETIFOLIA Linn.; Blanco Fl. Filip. (1837) 661; ed. 2 (1845) 460; ed. 3, 3 (1879) 67.

The species was correctly interpreted by Blanco, but Fernandez-Villar erroneously reduced the form described by Blanco to *Casuarina sumatrana* Miq. Linnaeus must be cited as the author for the species as well as the genus, although Forster is usually given as the author of the former. The combination *Casuarina equisetifolia* (*equisefolia*) Linnaeus appears in Amoen. Acad. 4 (1759) 143, the species being typified by *Casuarina litorea* Rumph. Herb. Amb. 3, *pl. 57*. It is common and widely distributed in the Philippines along the seashore and extending far inland in open river valleys, reaching an altitude of at least 500 meters. It is widely known as *agoho*.

Illustrative specimen from Isabela Province, Luzon, June, 1913 (*Merrill: Species Blancoanae No. 595*).

PIPERACEAE

PIPER Linnaeus

Piper parvifolium Blanco Fl. Filip. (1837) 23 (sp. nov.); ed. 2 (1845) 17; ed. 3. 1 (1877) 32=**PIPER RETROFRACTUM** Vahl.

The species is common and widely distributed at low altitudes in the Philippines and is especially abundant in those provinces from which Blanco received most of his botanical material. It is still known in the vicinity of Manila as *sabía*, the native name cited by Blanco.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 523*).

PIPER NIGRUM Linn.; Blanco Fl. Filip. (1837) 21; ed. 2 (1845) 16; ed. 3, 1 (1877) 29, *t. 11*.

The Linnean species was correctly interpreted by Blanco, the Philippine form being referable to the var. *trioicum* C. DC. The pepper plant is cultivated only to a limited extent in the Philippines, not on a commercial scale, and is known as *pimienta* (Spanish), and *malisa* (Tagalog).

Illustrative specimen from Balayan, Batangas Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 585*).

Piper obliquum Blanco Fl. Filip. (1837) 22; ed. 2 (1845) 16; ed. 3, 1 (1877) 30, non Ruiz & Pav.=**PIPER CORYLISTACHYON** (Miq.) C. DC.

There is no doubt as to the correctness of Fernandez-Villar's reduction of Blanco's *Piper obliquum* to *P. corylistachyon* C. DC.

The species is common and widely distributed in the Philippines at low altitudes.

Illustrative specimen from Montalban, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 849*).

PIPER BETLE Linn.: Blanco Fl. Filip. (1837) 22 (*betel*); ed. 2 (1845) 16; ed. 3, 1 (1877) 30, *t. 12.*

The Linnean species was correctly interpreted by Blanco. The species is locally cultivated to supply the demand for betle leaf for use with the seed of *Areca catechu* for chewing, the mixture, with lime, being locally called *buyo.* A form of the species is common in thickets in some regions, but this wild form is not or but little used by the Filipinos. The Tagalog name of the betle pepper is *icmo* or *itmo.* *Piper blancoi* Merr. Philip. Journ. Sci. 1 (1906) 40 is a synonym.

Illustrative specimen from cultivated plants, Pasay, Rizal Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 835*).

Piper anisumolens Blanco Fl. Filip. (1837) 23 (sp. nov.) = **Piper anisodorum** Blanco op. cit. ed. 2 (1845) 16 (nom. nov.); ed. 3, 1 (1877) 31, *t. 362* = **PIPER BETLE** Linn.

Piper anisumolens was reduced by Fernandez-Villar to *Piper marginatum* Jacq., without good reason. I can see no reason for considering it other than a form of the common *Piper betle* Linn. The form distributed herewith is the plant still locally known as *buyo de anis,* and it agrees with Blanco's description so far as the description goes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, 1915 (*Merrill: Species Blancoanae No. 788*).

CHLORANTHACEAE

CHLORANTHUS Swartz

Chloranthus inconspicuus Blanco Fl. Filip. ed. 2 (1845) 54; ed. 3, 1 (1877) 101, non Sw. = **CHLORANTHUS OFFICINALIS** Blume.

This species is widely distributed in the Philippines, occurring in primeval forest.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, May, 1914, *comm. F. C. Gates* and *N. Catalan* (*Merrill: Species Blancoanae No. 25*).

SALICACEAE

SALIX Linnaeus

Salix azaolana Blanco Fl. Filip. ed. 2 (1845) 539 (*Salis*) (sp. nov.); ed. 3, 3 (1879) 188 = ? **SALIX TETRASPERMA** Roxb.

Blanco's description of the species is very short and imperfect,

but the identification of it is certain, as the form distributed herewith is the only representative of the genus known from the Philippines. Fernandez-Villar reduced it to *Salix tetrasperma* Roxb., and it is certainly very closely allied to that species if not identical with it; it seems to differ from Roxburgh's species in its long-petioled leaves. It is known in the Philippines only from Luzon, where it is of very local occurrence in Rizal and Laguna Provinces; I have sterile specimens of what is apparently the same species from Cagayan Province. Blanco's specimens were from Bulacan Province, Luzon.

Illustrative specimen from near Bosoboso, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 116*).

JUGLANDACEAE

ENGLEHARDTIA Leschenault

Gyrocarpus pendulus Blanco Fl. Filip. ed. 2 (1845) 55 (sp. nov. as *Girocarpus pendulos*); ed. 3, 1 (1877) 104, *t. 387*=**ENGLEHARDTIA SPICATA** Blume (*E. philippinensis* C. DC.).

The identity of Blanco's species is very certain, and there seems to be no doubt as to the correctness of the reduction to *Englehardtia spicata* Blume. The Philippine form has been described by C. de Candolle as a distinct species, *Englehardtia philippinensis*, but Blanco's specific name is older than this one, should a critical revision of the genus show the Philippine form really to be different from that described by Blume.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 176*).

FAGACEAE

CASTANOPSIS Spach

Fagus philippensis Blanco Fl. Filip. ed. 2 (1845) 503 (sp. nov.); ed. 3, 3 (1879) 132=**CASTANOPSIS PHILIPPENSIS** (Blanco) Vid.

This species was erroneously reduced by Fernandez-Villar to the very different *Castanopsis sumatrana* A. DC. It is widely distributed in Luzon, but is apparently nowhere abundant.

Illustrative specimen (topotype) from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 672*).

QUERCUS Linnaeus

Quercus glabra Blanco Fl. Filip. (1837) 727, non Thunb.=**QUERCUS OVALIS** Blanco op. cit. ed. 2 (1845) 502 (sp. nov.); ed. 3, 3 (1879) 129, *t. 440* (as *Q. conocarpa*, non Oudem.).

This is apparently a valid species and is known from only a few localities in central Luzon. *Quercus blancoi* A. DC.

Prodr. 16 [2] (1864) 97 is merely a new name for *Quercus glabra* Blanco, non Thunb., and is hence a synonym of *Quercus ovalis* Blanco; *Quercus ovalis* Blanco of the second edition of the Flora de Filipinas is merely a new name for *Q. glabra* of the first.

Illustrative specimen (a topotype) from Angat, Bulacan Province, Luzon, December, there known as *macabingao* (*Merrill: Species Blancoanae No. 704*).

Quercus molucca Blanco Fl. Filip. (1837) 726, non Linn.=**Quercus concentrica** Blanco op. cit. ed. 2 (1845) 502; ed. 3, 3 (1879) 129, *t. 441* (as *Q. costata*, non Blume) non Lour.=**QUERCUS SOLERIANA** Vid. Rev. Pl. Vasc. Filip. (1886) 261.

This species was reduced by Fernandez-Villar to *Quercus llanosii* A. DC., but Blanco's description applies better to the form described by Vidal as *Quercus soleriana*, the most common and most widely distributed species of the genus in the Philippines.

Illustrative specimen from near Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 538*).

QUERCUS COOPERTA Blanco Fl. Filip. ed. 2 (1845) 503 (sp. nov.); ed. 3, 3 (1879) 130.

Fernandez-Villar reduced this to *Castanopsis costata* A. DC., where it certainly does not belong. I strongly suspect that *Quercus fernandezii* Vid. is identical with *Q. cooperta* Blanco, but its exact status is still somewhat doubtful owing to lack of good material representing it. I can see no reason for substituting Vidal's later name, *fernandezii*, for Blanco's much earlier one, *cooperta*. *Castanea cooperta* Oerst., based wholly on Blanco's species, is a synonym.

Quercus cerris Blanco Fl. Filip. (1837) 727; ed. 2 (1845) 503; ed. 3, 3 (1879) 130, non Linn.=**QUERCUS** sp.

This was reduced by Fernandez-Villar to *Castanopsis javanica* A. DC., for which there is not the slightest justification. Blanco gave only a very short and imperfect description of a single fruit, from which it is quite impossible to determine what species he may have had before him. The reference of Philippine material to a Mediterranean species is a good illustration of Blanco's lack of knowledge of the principles of geographic distribution of plants.

ULMACEAE

TREMA Loureiro

Celtis lima Blanco Fl. Filip. (1837) 197 (sp. nov.); ed. 2 (1845) 139; ed. 3, 1 (1877) 250=**TREMA ORIENTALIS** (Linn.) Blume.

This species is very widely distributed in the Philippines and

is abundant in lands recently cleared and reverting to forests. This is *Trema amboinensis* of most authors but is not *Celtis amboinensis* Willd.; see Merrill, E. D., An interpretation of Rumphius's Herbarium Amboinense (1917) 187. Blanco's description typifies *Sponia blancoi* Planch and *Trema blancoi* Blume.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae 345*).

CELTIS Linnaeus

CELTIS PHILIPPENSIS Blanco Fl. Filip. (1837) 197; ed. 2 (1845) 139; ed. 3, 1 (1877) 249.

A species of wide distribution in the Philippines, commonly known as *malaitmo* or *malaicmo*, names also applied to the allied *Celtis luzonica* Warb.

Illustrative specimen from Rizal Province, Luzon, December, 1912 (*Merrill: Species Blancoanae No. 52*).

MORACEAE

MORUS Linnaeus

MORUS ALBA Linn.; Blanco Fl. Filip. (1837) 705; ed. 2 (1845) 489; ed. 3, 3 (1879) 109, *t. 206*.

The Linnean species was correctly interpreted by Blanco. It was first introduced into the Philippines, according to Blanco, by Father Sedeño in the year 1593, and again in 1780 by Father M. Galiana. The species is widely distributed in towns throughout the Archipelago, but apparently has become naturalized only in northern Luzon, Cagayan Province, etc. It is locally known under its Spanish name *morera*. Our form is *Morus rubra* Linn.

Illustrative specimen from Los Baños, Laguna Province, Luzon, June, 1914, *comm. E. Quisumbing* (*Merrill: Species Blancoanae No. 39*).

ALLAEANTHUS Thwaites

Morus luzonica Blanco Fl. Filip. (1837) 703 (sp. nov.) = **Broussonetia luzoniensis** Blanco op. cit. ed. 2 (1845) 488 (nom. nov.); ed. 3, 3 (1879) 107, *t. 278* = **ALLAEANTHUS LUZONICUS** (Blanco) F.-Vill.

The species is widely distributed in Luzon at low altitudes and is universally known to the Tagalogs as *himbabáo*.

Illustrative specimen from Los Baños, Laguna Province, Luzon, *comm. F. C. Gates*, March, 1914 (*Merrill: Species Blancoanae No. 468*).

MALAISIA Blanco

Malaisia tortuosa Blanco Fl. Filip. (1837) 789 (gen. et sp. nov.); ed. 3, 3 (1879) 196 = **MALAISIA SCANDENS** (Lour.) Planch.

The species is widely distributed in the Philippines at low

altitudes. Blanco, who proposed *Malaisia* as a new genus, derived his generic name from the Tagalog *malaisis*, one of the local names of the species. K. Schumann has indicated the Philippine form as the var. *rolfei*, but Blanco's name is the earliest available one if the variety is to be maintained.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 313*).

STREBLUS Loureiro

Calius lactescens Blanco Fl. Filip. (1837) 698 (gen. et sp. nov.); ed. 2 (1845) 485; ed. 3, 3 (1879) 103, *t. 171*=**STREBLUS ASPER** Lour.

This species is very common and widely distributed in the Philippines at low and medium altitudes. Blanco's description is the whole basis of *Streblus lactescens* Blume, which accordingly is an exact synonym of *Streblus asper* Lour. The generic name *Calius* is derived from the common Tagalog name of the plant, *calios*.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 151*).

CUDRANIA Trécul

Morus tinctoria Blanco Fl. Filip. (1837) 704, non Linn.=**Broussonetia tinctoria** Blanco op. cit. ed. 2 (1845) 488; ed. 3, 3 (1879) 108, *t. 418*, non Spreng.=**CUDRANIA JAVENSIS** Tréc.

This species is common and widely distributed in the Philippines in thickets, second-growth forests, etc., extending from sea level to an altitude of about 1,400 meters. Blanco's species was reduced by F.-Villar to *Cudrania obovata* Tréc., which, at least so far as the Philippine form so named is concerned, does not appear specifically to differ from *Cudrania javensis* Tréc.

Illustrative specimen from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 146*).

ARTOCARPUS Forster

Artocarpus rima Blanco Fl. Filip. (1837) 671 (*Arcthocarpus*) (sp. nov.); ed. 2 (1845) 467 (*Arctocarpus*); ed. 3, 3 (1879) 77 *t. 267*=**ARTOCARPUS COMMUNIS Forst.**

This seedless breadfruit is not common in the Philippines and is apparently not highly prized by the natives; it is found only in cultivation. The fruit is rather small and is apparently inferior to that of some of the Polynesian forms. Its Tagalog name is *rima* or *rimas*.

Illustrative specimens from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 603*); Batangas Province, Luzon, February 4, 1915 (*Merrill: Species Blancoanae No. 760*).

Artocarpus incisa L. f.; Blanco Fl. Filip. (1837) 668 (*Arctocarpus*); ed. 2 (1845) 465; ed. 3, 3 (1879) 75=**ARTOCARPUS COMMUNIS** Forst. var.

This is the wild form with rather small, inedible fruits, the tips of the anthocarps slender and prolonged. It is common and widely distributed in the Philippines.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1913, there known as *antipolo* (*Merrill: Species Blancoanae No. 214*).

Artocarpus camansi Blanco Fl. Filip. (1837) 670 (*Arctocarpus*) (sp. nov.); ed. 2 (1845) 467; ed. 3, 3 (1879) 77, *t. 457* (*camangsi*)=**ARTOCARPUS COMMUNIS** Forst. (*A. incisa* L. f.).

This form of the breadfruit tree is common in cultivation in the Philippines but is nowhere wild, and hence undoubtedly an introduced plant in the Archipelago. In appearance it is identical with the form described by Blanco as *Artocarpus rima*, but differs constantly in always producing fruits with numerous seeds, while *A. rima* Blanco is always seedless.

Illustrative specimen from Manila, Luzon, February, 1915, there known as *camansi* (*Merrill: Species Blancoanae No. 830*).

ARTOCARPUS ODORATISSIMA Blanco Fl. Filip. (1837) 671 (*Arctocarpus*) (sp. nov.); ed. 2 (1845) 467; ed. 3, 3 (1879) 78.

This is apparently an entirely valid species, identical with *Artocarpus tarap* Becc. of Borneo. Blanco's specimens were from Mindoro, there known as *oloy;* the tree still occurs in parts of Mindoro where it is cultivated for its edible fruits, but is much more common in Mindanao and in Basilan.

Illustrative specimens from Calapan, Mindoro, May, 1916, a topotype, there known as *oloy*, and from Basilan, August, 1916, there known as *marang* (*Merrill: Species Blancoanae Nos. 1019, 1018*).

Artocarpus maxima Blanco Fl. Filip. (1837) 669 (*Arctocarpus*) (sp. nov.)=**Artocarpus integrifolia** Linn. f.; Blanco op. cit. ed. 2 (1845) 466; ed. 3, 3 (1879) 76=**ARTOCARPUS INTEGRA** (Thunb.) Merr. Interpret. Herb. Amb. (1917) 190.

This is common and widely distributed in the Philippines at low and medium altitudes in cultivation; certainly introduced, but of prehistoric introduction. Widely known as *nanca* or *lanca* in the Philippines.

Illustrative specimen from Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 415*).

ARTOCARPUS LAMELLOSA Blanco Fl. Filip. (1837) 667 (*Arctocarpus*) (sp. nov); ed. 2 (1845) 465; ed. 3, 3 (1879) 74.

This species is of wide distribution in northern and central

Luzon, but is apparently of local occurrence. *Artocarpus nitida* Tréc. (1847) is apparently an exact synonym.

Illustrative specimen from Batangas Province, Luzon, August, 1914, there known as *anobling* (*Merrill: Species Blancoanae No. 100*).

Artocarpus ovata Blanco Fl. Filip. (1837) 666 (*Arctocarpus*) (sp. nov.); ed. 2 (1845) 464; ed. 3, 3 (1879) 74, *t. 450*, non Noronha=**ARTOCARPUS CUMINGIANA** Tréc.

The species is common and widely distributed in the Philippines, and is commonly known as *anobling*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 254*).

FICUS Linnaeus

Ficus glomerata Blanco Fl. Filip. (1837) 683; ed. 2 (1845) 475; ed. 3, 3 (1879) 87, non Roxb.=**FICUS MINAHASSAE** Miq.

This very characteristic species is of wide distribution in the Philippines, extending from sea level to an altitude of at least 1,500 meters. It is remarkable for its very striking cauliflory, the individual fruits being crowded in dense heads.

Illustrative specimen from Los Baños, Laguna Province, Luzon, *comm. F. C. Gates*, March, 1914 (*Merrill: Species Blancoanae No. 500*).

Ficus aspera nota Blanco Fl. Filip. (1837) 677 (var. nov.)=**Ficus scabra** Blanco op. cit. ed. 2 (1845) 471; ed. 3, 3 (1879) 81, non Forst. f.=**FICUS NOTA** (Blanco) Merr. in Govt. Lab. (Philip.) Publ. 17 (1904) 10.

This was erroneously reduced by F.-Villar to *Ficus racemifera* Roxb., a species that does not extend to the Philippines. It is common and widely distributed in the Archipelago at low altitudes, being widely known as *tibíg*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 550*).

Ficus laevigata Blanco Fl. Filip. (1837) 682; ed. 2 (1845) 474; ed. 3, 3 (1879) 86, non Vahl=**FICUS VARIEGATA** Blume.

A species of wide distribution in the Philippines, occurring in forests at low and medium altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *tangisang bayauac* (*Merrill: Species Blancoanae No. 438*).

FICUS PAYAPA Blanco Fl. Filip. (1837) 683 (sp. nov.); ed. 2 (1845) 475; ed. 3, 3 (1879) 86, *t. 203* (as *F. pilosa* Reinw.)

Ficus indica Blanco Fl. Filip. (1837) 681; ed. 2 (1845) 473; ed. 3, 3 (1879) 85, non Linn.=**FICUS PAYAPA** Blanco.

In spite of Blanco's short and imperfect description there is no doubt as to the form he intended, as this same form has been received several times under the Tagalog name *payapa*, a name not appearing on any of our other species of the genus. Blanco compares his species to "balete" (*Ficus indica* Blanco, non Linn.), stating that it differs only in its "calyx" (bracts) consisting of two scales; and his description of *Ficus indica* calls for a species with oval fruits as large as an acorn. This form, rightly or wrongly, I previously have referred to *Ficus forstenii* Miq., and it is, at any rate, very closely allied to Miquel's species; Blanco's specific name, however, is the older. Warburg has apparently described the same species as *Ficus vidaliana* Warb. in Perk. Frag. Fl. Philip. (1905) 197, distinguishing this from *F. forstenii* Miq. by the absence of bracts. I have examined Warburg's type, but can see no reason for retaining the species. The fruits on the type specimen, *Warburg 14033*, are detached and present neither pedicels nor bracts; it seems probable that the bracts were present, inasmuch as *For. Bur. 2374 Borden*, from the same province, matches the type except that Borden's specimens have attached fruits with bracts, and that the bracts on Warburg's specimen became detached and lost either in preparing or in mounting the specimen. The leaves vary from acute to rounded or slightly cordate at the base. Blanco's species was erroneously reduced by Fernandez-Villar to *Ficus microcarpa* Linn. f. Fernandez-Villar reduced Blanco's *Ficus indica* to *F. saxophila* Blume, and while Blume's species occurs in the Philippines, it is very rare and local and does not conform at all to Blanco's description. There is not the slightest doubt that it is identical with the form that Blanco otherwise described as *Ficus payapa;* in fact Blanco states that the only character by which he distinguished *Ficus payapa* from *F. indica* was that the former had two bracts and the latter three at the base of the fruit.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 82*).

Ficus hispida odorata Blanco Fl. Filip. (1837) 686 (var. nov.); ed. 2 (1845) 476; ed. 3, 3 (1879) 89, *t. 358*=**FICUS ODORATA** (Blanco) Merr. (*F. arenata* Elm.).

This characteristic species is widely distributed in the Philippines at low altitudes; it is sometimes cultivated for the sake of its very rough leaves, which are used in polishing and in cleaning dishes, etc. The species is very fragrant in drying.

Illustrative specimen from Los Baños, Laguna Province, Luzon, May, 1914, *comm. F. C. Gates* and *N. Catalan* (*Merrill: Species Blancoanae No. 24*).

FICUS PSEUDOPALMA Blanco Fl. Filip. (1837) 680 (sp. nov.); ed. 2 (1845) 473; ed. 3, 3 (1879) 84, *t. 356.*

A very characteristic species of wide distribution in the Philippines at low and medium altitudes. This shrub or small tree is erect, normally unbranched, the leaves crowded at the apex of the trunk, receptacles solitary or in pairs, axillary. It is commonly known as *niog-niogan* (Tagalog), diminutive of *niog* (*Cocos nucifera*), on account of its palm-like habit. *Ficus haenkei* Warb. and *F. blancoi* Elm. are synonyms.

Illustrative specimen from Montalban, Rizal Province, Luzon, February, 1914 (*Merrill: Species Blancoanae No. 416*).

Ficus rostrata Blanco Fl. Filip. (1837) 697 (sp. nov.); ed. 2 (1845) 472; ed. 3, 3 (1879) 83, non Lam.=**FICUS RUBROVENIA** Merr.

Blanco definitely indicates his *Ficus rostrata* as a new species: "Especie nueva distinta de la rostrata de Spr." It was reduced by Fernandez-Villar to *Ficus radicans* Roxb., which some authors, at least, consider as identical with *F. rostrata* Lam. Neither *F. rostrata* Lam. nor *F. radicans* Roxb. is known from the Philippines. Blanco's description of *Ficus rostrata* agrees with *F. rubrovenia* Merr. better than with any other Philippine form known to me.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 205*).

FICUS HAUILI Blanco Fl. Filip. (1837) 684 (sp. nov.)=**Ficus laurifolia** Blanco op. cit. ed. 2 (1845) 475; ed. 3, 3 (1879) 87, non Lam.

Ficus laccifera Blanco op. cit. 673; 468; 80, non Roxb.=**FICUS HAUILI** Blanco.

Ficus hauili Blanco is possibly the earliest valid name for this species, which must be considered as the Philippine representative of *Ficus leucantotoma* Poir.; possibly some future monographer will consider *F. hauili* to be a synonym of Poiret's species. The species is very common and very widely distributed in the Philippines and is almost universally and exclusively known in the Tagalog Provinces as *hauili*. *Ficus laccifera* Blanco, non Roxb., is unquestionably the same species, and material received from the Visayan Islands under the native name *lagnob*, agreeing also with Blanco's description, matches *Ficus hauili* exactly. *Ficus hauili* Blanco (*F. laurifolia* Blanco) was reduced by Fernandez-Villar to *Ficus leucopleura* Blume, which is generally considered to be a synonym of *F. leucantotoma* Poir.; and *F. laccifera* Blanco,

non Roxb., was reduced by Fernandez-Villar to *F. radiata* Decne., which is also said to be a synonym of *Ficus leucantotoma* Poir. Philippine material must be critically compared with the types of *Ficus leucantotoma* Poir., *F. leucopleura* Blume, and *F. radiata* Decne., properly to determine the status of *Ficus hauili* in reference to these three species.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 522*).

Ficus heterophylla Blanco Fl. Filip. (1837) 685; ed. 2 (1845) 476; ed. 3, 3 (1879) 89 (*F. hispida heterophylla*), non Linn.=**FICUS ULMIFOLIA** Lam. (*F. sinuosa* Miq.).

Ficus hispida Blanco Fl. Filip. (1837) 685; ed. 2 (1845) 476; ed. 3, 3 (1879) 88 non Forst.=**FICUS ULMIFOLIA** Lam.

Ficus hispida linearis Blanco op cit. 685; 476; 88 (var. nov.)=**FICUS ULMIFOLIA** Lam.

Ficus hispida hastata Blanco op. cit. 685; 476; 89 (var. nov.)=**FICUS ULMIFOLIA** Lam.

The species is very common in the Philippines. It is exceedingly variable in its vegetative characters, entire or nearly entire to deeply lobed leaves frequently being found on the same plant and even on the same branch.

The three forms of *Ficus hispida* described by Blanco are manifestly all referable to the protean *Ficus ulmifolia* Lam., some specimens of which show on the same branches all the leaf forms described by Blanco. F.-Villar reduced the first, which is merely a translation from some edition of one of Linnaeus's works, to *Ficus hirta* Vahl, a species allied to *F. heterophylla* Linn.; and the third to *F. quercifolia* Roxb. The typical forms of neither *Ficus heterophylla* Linn. nor *F. quercifolia* Roxb. occur in the Philippines, where their place is apparently taken by *Ficus ulmifolia* Lam.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Species Blancoanae No. 337*).

Ficus dicarpa Blanco Fl. Filip. (1837) 682 (sp. nov.)=**Ficus nepalensis** Blanco op. cit. ed. 2 (1845) 474; ed. 3, 3 (1879) 85, non Spreng.=**FICUS** sp.

Fernandez-Villar reduced this to *Ficus haematocarpa* Blume, a species to which Blanco's short and imperfect description does not at all apply. The whole description consists merely of the statement that the leaves are distichous, lanceolate, entire, glabrous, petioles short, fruit in axillary pairs, very small, their peduncles very long, the calyx (bracts) distant from the fruit, the plant known in Cebu as *talicot*. I can suggest no reduction for it.

Ficus argentea Blanco Fl. Filip. (1837) 681 (sp. nov.); ed. 2 (1845) 473; ed. 3, 3 (1879) 84=**FICUS** sp.

Fernandez-Villar reduced this to *Ficus polycarpa* Wall., to which Blanco's description does not apply. Its most likely place seems to be *Ficus ruficaulis* Merr., yet Blanco's description does apply sufficiently close to this form to warrant its definite reduction. Blanco's specimens were from the beach at Mariveles, Bataan Province, Luzon. Perhaps after all the form he described is *Ficus ruficaulis* Merr. with very young fruits.

Ficus aspera volubilis Blanco Fl. Filip. (1837) 676 (var. nov.); ed. 2 (1845) 472; ed. 3, 3 (1879) 82=**FICUS** sp.

This was reduced by Fernandez-Villar to *Ficus hederacea* Roxb., but there is no warrant for this. Blanco's name is practically a *nomen nudum*, there being no description, merely the statement that it was a small vine with very rough leaves. Its status is wholly indeterminable.

CONOCEPHALUS Blume

Procris violacea Blanco Fl. Filip. (1837) 706 (sp. nov.); ed. 2 (1845) 490; ed. 3, 3 (1879) 110=**CONOCEPHALUS VIOLACEUS** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 80 (*Conocephalus ovatus* Tréc.).

This was reduced by Fernandez-Villar to *Conocephalus suaveolens* Blume (1825), which may be the correct disposition of the Philippine form; *C. violaceus* (Blanco) Merr. if not identical with Blume's species is at least very closely allied to it. It is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimens from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 111* staminate, *No. 110* pistillate).

Procris erecta Blanco Fl. Filip. (1837) 707 (sp. nov.); ed. 2 (1845) 490; ed. 3, 3 (1879) 111=**CONOCEPHALUS ERECTUS** (Blanco) F.-Vill. Novis. App. (1880) 203 (*Conocephalus grandifolius* Warb.).

Blanco's species is unmistakably the form more recently described by Warburg as *Conocephalus grandifolius*. The leaves are described as "vellosas por ambas páginas * * * un pie de largo," which applies to no other known Philippine *Conocephalus*; the statement that the margins have "grandes escotaduras" is not good, as they are usually merely undulate. The leaves vary greatly in size.

Illustrative specimens from Bosoboso, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 871*); Cavite Province, Luzon, May, 1915 (*Merrill: Species Blancoanae No. 960*).

URTICACEAE

LAPORTEA Gaudichaud

Urtica umbellata Blanco Fl. Filip. (1837) 696, non Bory=**Urtica ferox** Blanco op. cit. ed. 2 (1845) 484; ed. 3, 3 (1879) 102, non Forst.= **LAPORTEA MEYENIANA** (Walp.) Warb. (*L. gaudichaudiana* Wedd.).

This species is widely distributed at low altitudes in central and northern Luzon and is well known from its violent stinging properties. The leaves reach 40 cm in length. The most common native names are *lipa* and *lupa*.

Illustrative specimen from Umingan, Pangasinan Province, May, 1914 (*Merrill: Species Blancoanae No. 401*).

FLEURYA Gaudichaud

Urtica sessiliflora Blanco Fl. Filip. (1837) 696, non Sw.=**Urtica capitata** Blanco op. cit. ed. 2 (1845) 483; ed. 3, 3 (1879) 101, non Linn.= **FLEURYA INTERRUPTA** (L.) Gaudich.

This is common and widely distributed in and about towns at low and medium altitudes in the Philippines; undoubtedly an introduced species in the Archipelago.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 455*).

ELATOSTEMA Forster

Dorstenia pubescens Blanco Fl. Filip. (1837) 692; ed. 2 (1845) 481; ed. 3, 3 (1879) 98, non Forst.=**ELATOSTEMA LUZONENSE** C. B. Rob. in Philip. Journ. Sci. 5 (1910) Bot. 512.

This reduction is not entirely satisfactory as Blanco's description does not fit Robinson's species in all respects. At the same time it is the only species that we have been able to find near Manila that at all agrees with Blanco's data. It was reduced by Fernandez-Villar to *Elatostema obtusum* Wedd., which is certainly an error. Blanco's specimens were from Pasig, while the illustrative specimens, cited below, were from just across the river from Pasig.

Illustrative specimen from near Fort William McKinley, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 158*).

BOEHMERIA Jacquin

Urtica nivea Linn.; Blanco Fl. Filip. (1837) 697; ed. 2 (1845) 484; ed. 3, 3 (1879) 102, *t. 385*=**BOEHMERIA NIVEA** (Linn.) Gaudich.

The Linnean species was certainly correctly interpreted by Blanco, although it properly belongs in the genus *Boehmeria* where it was placed by Gaudichaud. The species is cultivated

in northern Luzon and in the Batanes Islands to a limited extent, but is rarely found in cultivation in the central and southern parts of the Philippines. It has certainly been introduced into the Archipelago, from China, but its introduction was equally certainly prehistoric.

Illustrative specimen from Los Baños, Laguna Province, Luzon, June, 1914, *comm. E. Quisumbing* (*Merrill: Species Blancoanae No. 42*).

POUZOLZIA Gaudichaud

Urtica villosa Blanco Fl. Filip. (1837) 695; ed. 2 (1845) 483; ed. 3, 3 (1879) 99, non Salzm.=**POUZOLZIA ZEYLANICA** (Linn.) Benn.

Urtica japonica Blanco Fl. Filip. (1837) 694; ed. 2 (1845) 482; ed. 3, 3 (1879) 99, non Thunb.=**POUZOLZIA ZEYLANICA** (Linn.) Benn.

Urtica villosa Blanco was reduced by Fernandez-Villar to *Pouzolzia indica* Gaudich., a synonym of *P. zeylanica* (Linn.) Benn. There is no reason for considering *Urtica villosa* Blanco and *Urtica japonica* Blanco other than forms of the variable *Pouzolzia zeylanica* Benn., although Fernandez-Villar referred the latter to *Pouzolzia viminea* Wedd.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 486*).

PIPTURUS Weddel

Urtica baccifera Blanco Fl. Filip. (1837) 695, non Linn.=**Urtica arborescens** Link; Blanco op. cit. ed. 2 (1845) 483; ed. 3, 3 (1879) 100, *t. 871*=**PIPTURUS ARBORESCENS** (Link) C. B. Rob. (*Pipturus asper* Wedd.).

The species is very common and widely distributed in the Philippines, its universal Tagalog name being *dalonot*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 354*).

LORANTHACEAE

LORANTHUS Linnaeus

Lonicera symphoricarpos Blanco Fl. Filip. (1837) 161, non Linn.=**LORANTHUS PHILIPPENSIS** Cham. & Schlecht.; Blanco op. cit. ed. 2 (1845) 164; ed. 3, 1 (1877) 296.

The description is not good by any means, but Blanco was probably correct in admitting the species in his second edition as *Loranthus philippensis* Cham. & Schlecht. The species is very common in those parts of Luzon from which Blanco received most of his material.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 322*).

Loranthus pauciflorus Blanco Fl. Filip. (1837) 235, non Sw.=**Loranthus tomentosus** Blanco op. cit. ed. 2 (1845) 164; ed. 3, 1 (1877) 296, non Heyne=**LORANTHUS** sp.

Fernandez-Villar considered that the form Blanco described was a valid species and retained it as *Loranthus pauciflorus* Blanco. While the species, as described, is certainly a *Loranthus*, I know of no species that presents all the characters indicated by Blanco. I strongly suspect that Blanco had specimens of *Loranthus philippensis* Cham. & Schlecht., which he otherwise described as *Lonicera symphoricarpos* and as *L. philippensis*, and erroneously described the flowers as 6-merous; this is the only known Philippine *Loranthus* that conforms at all to Blanco's description in other characters, and which, moreover, is widely distributed and abundant in the regions from which he secured most of his botanical material.

ELYTRANTHE Blume

Hillia longiflora Blanco Fl. Filip. (1837) 235 (sp. nov.); ed. 2 (1845) 165; ed. 3, 1 (1877) 297=**ELYTRANTHE AMPULLACEA** (Roxb.) Engl. (*Loranthus ampullaceus* Roxb.).

This reduction was originally made by Fernandez-Villar, the correctness of which was formerly doubted by me. There is no question, however, that Blanco's description applies wholly to *Elytranthe ampullacea* Engl., at least as that species is represented by the specimens cited by me, Philip. Journ. Sci. 4 (1909) Bot. 146.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, parasitic on *Anisoptera thurifera* Blume, October, 1916 (*Merrill: Species Blancoanae No. 1033*).

VISCUM Linnaeus

Fusanus ? parasitus Blanco Fl. Filip. ed. 2 (1845) 53 (sp. nov.); ed. 3, 1 (1877) 100=**VISCUM ORIENTALE** Willd.

Viscum philippense Llanos Frag. Pl. Filip. (1851) 52 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 38 p. p.=**VISCUM ORIENTALE** Willd.

Blanco's *Fusanus parasitus* was reduced by Fernandez-Villar to *Viscum orientale* Willd., which is apparently the correct disposition of it. *Viscum philippense* Llanos, however, was reduced by him to *V. articulatum* Burm., although Llanos's description in part, as to the leaves: "media verticiladas, aovado-oblongas, coriáceas y lampiñas" certainly applies to *Viscum orientale* Willd. It is probable that Llanos based his description on specimens of *Viscum articulatum* growing as a parasite on *V. orientale*, as this relationship is occasionally presented by the

two species in the Philippines. *Viscum orientale* Willd. is widely distributed in the Philippines at low and medium altitudes, growing as a parasite on various trees.

Illustrative specimen from Antipolo, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 883*).

Viscum philippense Llanos Frag. Pl. Filip. (1851) 52 p. p. (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 38=**VISCUM ARTICULATUM** Burm. f.

In this reduction I follow Fernandez-Villar as Llanos's description is apparently, in part, that of a form of *Viscum articulatum* Burm. f.; see *Viscum orientale* Willd. above. The species is of local occurrence in the Philippines, ascending to an altitude of at least 800 meters, and is widely distributed in the Archipelago.

Illustrative specimen from San Francisco del Monte, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae* ***No. 792***).

Viscum capense Llanos Frag. Pl. Filip. (1851) 53; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 38, non Linn. f.=**VISCUM ANGULATUM Heyne.**

This is also Fernandez-Villar's reduction of Llanos's species. It may prove to be merely a form of *Viscum articulatum* Burm. f. with very narrow branchlets. This form is rare in the Philippines and has only been found in two or three localities.

Illustrative specimen from Calumpit, Bulacan Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 695*).

OPILIACEAE

CHAMPEREIA Griffith

Malulucban Blanco Fl. Filip. (1837) 188; ed. 2 (1845) 133; ed. 3, 1 (1877) 238=**CHAMPEREIA MANILLANA** (Blume) Merr.

Govantesia malulucban Llanos in Rev. Cienc. Nat. Madrid 15 (1865) 191 (gen. et sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 44=**CHAMPEREIA MANILLANA** (Blume) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 233.

This species is common and widely distributed at low altitudes in the Philippines, and presents considerable variation. *Malulucban*. as described by Blanco, was not intended as a generic name, but merely the native name of a plant that he could not refer to its proper genus. *Govantesia malulucban* Llanos, published as a new genus and species, is manifestly *Champereia manillana* Merr. This genus and species has been overlooked by all later authors except Fernandez-Villar; it does not appear in Index Kewensis, in Engler & Prantl's Natürlichen Pflanzen-

familien, or in De Dalla Torre & Harms's Genera Siphonogamarum. Philippine specimens have been referred by Vidal to *Champereia griffithiana* Planch., but Gamble, Journ. As Soc. Beng. 75[2] (1912) 278, considers that the Malay Peninsula form is distinct from the Philippine one. Synonyms of *Champereia manillana*, the specific name dating from 1850, are *Cansjera manillana* Blume, *Opilia cumingiana* Baill., *O. manillana* Baill., and *Champereia cumingiana* Merr.; perhaps also *Champereia griffithiana* Planch. and *C. griffithii* Kurz.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 641*).

OLACACEAE

OLAX Linnaeus

Fissilia psittacorum Blanco Fl. Filip. (1837) 28; ed. 2 (1845) 20; ed. 3, 1 (1877) 38, *t. 311*, non Lam.=**OLAX IMBRICATA** Roxb.

This species is common and widely distributed in the Philippines at low altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 234*).

BALANOPHORACEAE

BALANOPHORA Forster

Cynomorium philippense Blanco Fl. Filip. (1837) 665 (sp. nov.); ed. 2 (1845) 464; ed. 3, 3 (1879) 72=**BALANOPHORA** sp.

Blanco's description almost certainly applies to some species of *Balanophora*, but beyond this I can suggest no reduction of it. The description is confused, and the statement that it was found in salt water attached to the decaying roots of trees is probably erroneous. Blanco saw only dried specimens transmitted from Cebu and cited the native name *capulao* for it. Fernandez-Villar suggested no reduction of it.

ARISTOLOCHIACEAE

ARISTOLOCHIA Linnaeus

ARISTOLOCHIA SERICEA Blanco Fl. Filip. (1837) 283 (sp. nov.); ed. 2 (1845) 198; ed. 3, 1 (1877) 350.

Fernandez-Villar erroneously reduced this to *Bragantia corymbosa* Griff., a species that does not extend to the Philippines, and one to which Blanco's description does not at all apply. *Aristolochia sericea* Blanco is exactly the form described by Masters as *Aristolochia imbricata* Mast., for which Blanco's name should be substituted. Cuming's specimen, on which

Master's description was based, was from Ilocos Norte Province, Luzon, Blanco's specimens being from Agoo, Union Province, Luzon. The species is known only from the Ilocano provinces, where it has been collected several times.

Illustrative specimen from Union Province, Luzon, December, 1916, here known as *banguisi* (*Merrill: Species Blancoanae No. 1049*).

Aristolochia subsagittata Blanco Fl. Filip. (1837) 283 (sp. nov.); ed. 2 (1845) 197; ed. 3, 1 (1877) 350, *t. 104*=**ARISTOLOCHIA TAGALA** Cham.

Aristolochia indica Blanco op. cit. 282; 197; 349, non Linn.=**ARISTOLOCHIA TAGALA** Cham.

Aristolochia tagala Cham. is the only indigenous species of the genus found near Manila, and Blanco's descriptions of both *Aristolochia subsagittata* and *A. indica* apply to it. The latter, from Blanco's description, has nothing to do with the Linnean species, although Fernandez-Villar considered that he correctly intrepreted *Aristolochia indica* Linn. *Aristolochia tagala* Cham. presents a great deal of variation in its vegetative characters, in the shape and size of its leaves, the length of its petioles, etc.

Illustrative specimen from between Manila and Pasig, Rizal Province, Luzon, March, 1911 (*Merrill: Species Blancoanae No. 289*).

RAFFLESIACEAE

RAFFLESIA R. Brown

Rafflesia philippensis Blanco Fl. Filip. ed. 2 (1845) 565 (sp. nov.)= **Rafflesia lagascae** Blanco op. cit. 595 (sp. nov.); ed. 3, 3 (1879) 231= **RAFFLESIA MANILLANA** Teschem.

This species is parasitic on *Cissus* sp. and is of very local occurrence in the Philippines; see Brown, W. H., The relation of Rafflesia manillana to its host, Philip. Journ. Sci. 7 (1912) Bot. 209–226, *pl. XII–XXI*.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, May, 1914, *comm. W. H. Brown* (*Merrill: Species Blancoanae No. 535*).

POLYGONACEAE

POLYGONUM Linnaeus

Polygonum stoloniferum Blanco Fl. Filip. (1837) 314 (*Poligonum*) (sp. nov.); ed. 2 (1845) 219; ed. 3, 2 (1878) 45=**POLYGONUM BARBATUM** Linn.

There is no doubt as to the correctness of Fernandez-Villar's reduction of Blanco's species. It is common and widely distributed in the Philippines at low and medium altitudes, but

the only region near Manila where it has been found is Pasig, the town from which Blanco secured his specimens.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 141*).

Polygonum bellardi Blanco Fl. Filip. (1837) 314 (*Poligonum*), ed. 2 (1845) 219; ed. 3, 2 (1878) 45, non All.=**POLYGONUM TOMENTOSUM** Willd.

Blanco's conception of Allioni's species was reduced by Fernandez-Villar to *Polygonum orientale* Linn., while in Index Kewensis it is reduced to *Polygonum persicaria* Linn., both of which are wrong; it is manifestly referable to *P. tomentosum* Willd. The species is fairly common along the banks of the Pasig River, near Manila.

Illustrative specimen from the Barrio of Pineda, Pasig, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 191*).

RUMEX Linnaeus

Rheum muricatum Blanco Fl. Filip. (1837) 327 (sp. nov.)=**Rumex muricatus** Blanco op. cit. ed. 2 (1845) 195 (comb. nov.); ed. 3, 1 (1877) 346=**RUMEX MARITIMUS** Linn.

This reduction was made by Fernandez-Villar and is apparently the correct disposition of the form that Blanco described. I have seen no Philippine specimens of it, Blanco's description having been based on introduced and cultivated plants.

CHENOPODIACEAE

CHENOPODIUM Linnaeus

CHENOPODIUM AMBROSIOIDES Linn.; Blanco Fl. Filip. (1837) 200; ed. 2 (1845) 140; ed. 3, 1 (1877) 253, *t. 69*.

The Linnean species was correctly interpreted by Blanco. It is known throughout the Philippines as *aposotis*. It was introduced from Mexico by the Spaniards for medicinal purposes and is now widely distributed in the Archipelago in cultivation and as a naturalized plant.

Illustrative specimen from Pasay, Rizal Province, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 244*).

AMARANTHACEAE

DEERINGIA R. Brown

Celosia baccata Retz.; Blanco Fl. Filip. (1837) 193=**Deeringia celosioides** R. Br.; Blanco op. cit. ed. 2 (1845) 135; ed. 3, 1 (1877) 244, *t. 236*=**D. AMARANTHOIDES** (Lam.) Merr. Interpret. Herb. Amb. (1917) 211 (*D. baccata* Moq.).

This species, correctly interpreted by Blanco, is common and

widely distributed in the Philippines at low altitudes in the settled areas.

Illustrative specimen from Pasay, Rizal Province, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 445*).

CELOSIA Linnaeus

CELOSIA ARGENTEA Linn.; Blanco Fl. Filip. (1837) 192; ed. 2 (1845) 135; ed. 3, 1 (1877) 243.

The Linnean species was correctly interpreted by Blanco. An introduced species now widely distributed in the settled areas of the Philippines.

Illustrative specimen from Los Baños, Laguna Province, Luzon, May, 1914, *comm. N. Catalan* (*Merrill: Species Blancoanae No. 22*).

CELOSIA CRISTATA Linn.; Blanco Fl. Filip. (1837) 191=**Celosia coccinea** Linn.; Blanco op. cit. ed. 2 (1845) 134; ed. 3, 1 (1877) 241, *t. 64.*

The form described is the ordinary cock's comb, *Celosia cristata* Linn. It is rather commonly cultivated in the Philippines for ornamental purposes, but is not spontaneous, at least in the fasciated form. It is suspected that *Celosia cristata* Linn. is nothing but a fasciated form of *C. argentea* Linn.

Illustrative specimen from Batangas, Batangas Province, Luzon, October 20, 1916, there known as *palong manoc* (*Merrill: Species Blancoanae No. 1036*).

AMARANTHUS Linnaeus

AMARANTHUS SPINOSUS Linn; Blanco Fl. Filip. (1837) 710; ed. 2 (1845) 491; ed. 3, 3 (1879) 113.

The Linnean species was correctly interpreted by Blanco. It is very common and widely distributed in the Philippines at low altitudes in the settled areas; abundant also along gravel bars in the beds of streams and along the shores of rivers. It is certainly an introduced plant in the Philippines.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 282*).

Amaranthus mangostanus Blanco Fl. Filip. (1837) 711; ed. 2 (1845) 492; ed. 3, 3 (1879) 114, *t. 289* (as *A. cruentus*), non Linn.=**AMARANTHUS GANGETICUS** Linn.

This was reduced by Fernandez-Villar to *Amaranthus melancholicus* Linn., which is supposed to be a synonym of *A. gangeticus* Linn. Blanco's description agrees with the characters of *Amaranthus gangeticus* Linn.

AERUA Forskål

Illecebrum lanatum Murr.; Blanco Fl. Filip. (1837) 190=**Celosia lanata** Blanco op. cit. ed. 2 (1845) 134; ed. 3, 1 (1877) 241, *t. 354*, non Linn.=**AERUA LANATA** (Linn.) Juss.

This species is of rather wide distribution in the settled areas at low altitudes, growing in waste places; certainly introduced.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 359*).

ACHYRANTHES Linnaeus

ACHYRANTHES ASPERA Linn.; Blanco Fl. Filip. (1837) 188; ed. 2 (1845) 133; ed. 3, 1 (1877) 239.

The Linnean species was apparently correctly interpreted by Blanco. It is a common weed in the settled areas of the Philippines and is manifestly an introduced plant in the Archipelago.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 424*).

ALTERNANTHERA Forskål

Achyranthes villosa Blanco Fl. Filip. (1837) 189; ed. 2 (1845) 134; ed. 3, 1 (1877) 240, non Forsk.=**ALTERNANTHERA SESSILIS** (Linn.) R. Br.

Illecebrum triandrum Llanos Frag. Pl. Filip. (1851) 61; F.-Vill. & Naves in Blanco Fl. Filip. ed 3, 4[1] (1880) 43, non Ham.=**ALTERNANTHERA SESSILIS** R. Br.

Both of these were reduced by Fernandez-Villar to *Alternanthera denticulata* R. Br. and are apparently but forms of the very common and variable *Alternanthera sessilis*. It is found throughout the Philippines in the settled areas at low and medium altitudes.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 68*).

GOMPHRENA Linnaeus

GOMPHRENA GLOBOSA Linn.; Blanco Fl. Filip. (1837) 198; ed. 2 (1845) 139; ed. 3, 1 (1877) 251, *t. 68*.

The Linnean species, correctly interpreted by Blanco, is certainly an introduced plant in the Philippines. It is found in cultivation, occasionally as an escape, throughout the Archipelago in the settled areas.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 70*).

NYCTAGINACEAE

MIRABILIS Linnaeus

Mirabilis longiflora Blanco Fl. Filip. (1837) 77; ed. 2 (1845) 57; ed. 3, 1 (1877) 109, non Linn.=**MIRABILIS JALAPA** Linn.

This species is common and widely distributed in cultivation, often also found in waste places, throughout the Philippines. It was introduced from Mexico at an early date and is more generally known under the Spanish names *maravilla* and *a las cuatro*.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 84*).

BOERHAAVIA Linnaeus

BOERHAAVIA DIFFUSA Linn.; Blanco Fl. Filip. (1837) 8; ed. 2 (1845) 6; ed. 3, 1 (1877) 11, *t. 93*.

The Linnean species was correctly interpreted by Blanco. There is no doubt that *B. repens* Linn. is an exact synonym. It is common and widely distributed in the Philippines in the settled areas at low altitudes; certainly an accidentally introduced weed.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 274*).

PISONIA Plumier

PISONIA ACULEATA Linn.; Blanco Fl. Filip. (1837) 195; ed. 2 (1845) 137; ed. 3, 1 (1877) 247, *t. 394*.

The Linnean species was correctly interpreted by Blanco. The species is of wide distribution in the Philippines at low altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 759*).

Buginvillea racemosa Blanco Fl. Filip. (1837) 307 (sp. nov.); ed. 2 (1845) 214; ed. 3, 2 (1878) 36 (*Bugainvilla*)=**PISONIA EXCELSA** Blume.
Cedrota guianensis Blanco Fl. Filip. ed. 2 (1845) 213; ed. 3, 2 (1878) 33, non Raeusch.=**PISONIA EXCELSA** Blume.

Fernandez-Villar reduced *Buginvillea racemosa* Blanco to *Pisonia excelsa* Blume and *Cedrota guianensis* to *P. umbellifera* Seem.; but, judging from our large series of specimens of *Pisonia* from all parts of the Philippines, I am now of the opinion that but a single species is represented by Blanco's two descriptions, and that both species are probably *Pisonia excelsa* Blume. Specimens recently received from Cebu under the Visayan name *tac-an*, cited by Blanco under his *Cedrota guianensis*,

appear to me to be specifically identical with the Angat material representing *Buginvillea racemosa* Blanco. Most of our specimens, now so referred, are, however, from shrubs and small trees, and nearly all of them have been determined as *Pisonia umbellifera* Seem. From the descriptions and botanical material available in Manila it is very difficult to distinguish between Seeman's and Blume's species. Whatever the species is, it is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen (a topotype of *Buginvillea racemosa*) from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 754*).

Cordia olitoria Blanco Fl. Filip. (1837) 123 (sp. nov.); ed. 2 (1845) 88; ed. 3, 1 (1877) 159, *t.* 44=**PISONIA ALBA** Spanoghe in Linnaea 15 (1841) 342.

This form occurs in the Philippines only as an introduced and cultivated plant, strongly characterized, in nature, by its leaves being very pale-green, the younger ones frequently yellowish-white or nearly white. In Manila, although common in cultivation, it very rarely produces flowers, and I have observed but a single flowering branch during fifteen years' residence; in the southern Philippines, however, it apparently flowers more freely. From its Tagalog names *maluco* and *coles maluco* it is suggested that it may have been introduced into the Philippines from the Molucca Islands. Blanco's species was erroneously reduced by Fernandez-Villar to *Pisonia inermis* Forst., non Jacq. It seems very probable that Zollinger was correct in reducing *Pisonia alba* Spanoghe and *P. sylvestris* T. & B. to a single species, but although the new name proposed by him, *Pisonia olitoria* Zoll. in Nat. Tijdschr. Ned. Ind. 14 (1857) 154, is not valid, it invalidates the transfer of Blanco's specific name, which is older than Spanoghe's, to *Pisonia*. *Pisonia olitoria* was proposed by Zollinger without any reference to *Cordia olitoria* Blanco.

Illustrative specimen from Manila, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 134*).

AIZOACEAE

MOLLUGO Linnaeus

Glinus lotoides Linn.; Blanco Fl. Filip. (1837) 413; ed. 2 (1845) 288; ed. 3, 2 (1878) 169=**MOLLUGO LOTOIDES** (Linn.) O. Ktze. (*M. hirta* Thunb.).

The Linnean species was correctly interpreted by Blanco. It is of local distribution in waste places in and about towns at

low altitudes in the Philippines, growing especially in low places, ditches, etc., that are flooded during the rainy season. Apparently an introduced weed in the Archipelago.

Illustrative specimen from Guadalupe, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 724*).

Mollugo stricta Linn.; Blanco Fl. Filip. (1837) 52; ed. 2 (1845) 35; ed. 3, 1 (1877) 64=**MOLLUGO PENTAPHYLLA** Linn.

The Linnean species was correctly interpreted by Blanco, but it is a synonym of *Mollugo pentaphylla* Linn., which has priority.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 559*).

Mollugo subserrata Banco Fl. Filip. (1837) 51 (sp. nov.); ed. 2 (1845) 34; ed. 3, 1 (1877) 63=**MOLLUGO OPPOSITIFOLIA** Linn. (*M. spergula* Linn.).

This species is of very wide distribution in the settled areas in the Philippines, growing in waste places in and about towns, fallow fields, old rice paddies etc. Fernandez-Villar reduced it to *Mollugo stricta* Linn., and I accepted this reduction in my previous consideration of Blanco's species. Blanco's description, however, manifestly applies to *Mollugo oppositifolia*, not to *M. stricta*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 385*).

SESUVIUM Linnaeus

SESUVIUM PORTULACASTRUM Linn.; Blanco Fl. Filip. (1837) 426; ed. 2 (1845) 297; ed. 3, 2 (1878) 187.

The Linnean species was correctly interpreted by Blanco. It is found along the seashore throughout the Philippines.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 384*).

TRIANTHEMA Linnaeus

Portulaca toston Blanco Fl. Filip. (1837) 408 (sp. nov.)=**Portulaca axilliflora** Blanco op. cit. ed. 2 (1845) 285 (*axiliflora*) (nom. nov.); ed. 3, 2 (1878) 163, *t. 165*, non Pers.=**TRIANTHEMA PORTULACASTRUM** Linn.

A common weed in and about towns, especially in recently disturbed soil; certainly an introduced plant in the Philippines.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 224*).

PORTULACACEAE

PORTULACA Linnaeus

Portulaca meridiana Blanco Fl. Filip. (1837) 408; ed. 2 (1845) 285; ed. 3, 2 (1878) 163, non Linn.=**PORTULACA QUADRIFIDA** Linn.

This species is occasionally found in and about towns in the Philippines and is apparently an introduced species in the Archipelago.

Illustrative specimen from Manila, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 130*).

PORTULACA OLERACEA Linn.; Blanco Fl. Filip. (1837) 407; ed. 2 (1845) 284; ed. 3, 2 (1878) 162, *t. 164*.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the Philippines, occurring as a weed throughout the settled areas.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 172*).

BASELLACEAE

BASELLA Linnaeus

BASELLA RUBRA Linn.; Blanco Fl. Filip. (1837) 215; ed. 2 (1845) 151; ed. 3, 1 (1877) 272, *t. 74*.

Basella lucida Linn.; Blanco op. cit. 216, 151, 273=**BASELLA RUBRA** Linn.

The Linnean *Basella rubra* was correctly interpreted by Blanco, and apparently also *B. lucida* Linn., but the latter is not specifically distinct from the former. The species is widely distributed in the Philippines in the settled areas at low and medium altitudes, but is certainly not a native of the Archipelago; probably of prehistoric introduction. It is very generally known as *libato*, but this name is also applied to the more recently introduced *Anredera scandens* Moq., of American origin.

Illustrative specimen from Arayat, Pampanga Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 763*).

ANREDERA Jussieu

Gomphrena volubilis Blanco Fl. Filip. (1837) 199 (sp. nov.); ed. 2 (1845) 140; ed. 3, 1 (1877) 252=**ANREDERA SCANDENS** (Linn.) Moq. (*A. cumingii* Hassk.).

This species is very abundant in thickets in and near Manila. It was introduced from tropical America by the Spaniards and was thoroughly established previous to the year 1837, as Blanco notes that it was then common in Parañaque. *Anredera cumingii* Hassk. was based on Philippine material collected by Cuming.

Illustrative specimen from Pasay, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 188*).

CARYOPHYLLACEAE

POLYCARPON Loefling

Polycarpon polyphyllum Blanco Fl. Filip. (1837) 53 (*Policarpon*) (sp. nov.); ed. 2 (1845) 36; ed. 3, 1 (1877) 66=**POLYCARPON INDICUM** (Retz.) Merr. (*P. loeflingiae* Benth. & Hook. f.).

Blanco's specimens were from Pasig, near Manila, but the species has not been detected in this area since his time. In fact, it has so far been collected but once in the Philippines and is apparently a very rare and local species in the Archipelago. However, Blanco's description applies to *Polycarpon loeflingiae* Benth. & Hook. f. in all respects, and it was reduced by F.-Villar to this species. I have adopted what is apparently the oldest valid specific name for it, *Polycarpon indicum* (Retz.) Merr.

NYMPHAEACEAE

NELUMBIUM Jussieu

Nelumbium turbinatum Blanco Fl. Filip. (1837) 458 (sp. nov.)=**Nelumbium speciosum** Willd.; Blanco op. cit. ed. 2 (1845) 318; ed. 3, 2 (1878) 223, *t. 158*=**NELUMBIUM NELUMBO** (Linn.) Druce.

The form described by Blanco as a new species, *Nelumbium turbinatum*, in the first edition of his Flora de Filipinas was correctly reduced by him in the second edition to *N. speciosum* Willd. The species occurs in a number of lakes at low altitudes in the Philippines, from Luzon to Mindanao. Its common Tagalog name is *baino*, and its seeds are quite extensively used as food.

Illustrative specimen from Lake Bay, near Siniloan, Laguna Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 817*).

NYMPHAEA Linnaeus

Nymphaea lotus Blanco Fl. Filip. (1837) 456 (*Nimphaea*); ed. 2 (1845) 317; ed. 3, 2 (1878) 222, non Linn.=**NYMPHAEA PUBESCENS** Willd. (*Castalia pubescens* Blume).

This species is widely distributed in the Philippines at low altitudes in shallow lakes and in still streams. The form described by Blanco was considered by F.-Villar to represent the Linnean species, *Nymphaea lotus*, but Blanco's description applies unmistakably to *N. pubescens* Willd. The common Tagalog name is *lauas*.

Illustrative specimen from Manila, Luzon, July, 1914, from cultivated plants originating in Lake Bay, Luzon (*Merrill: Species Blancoanae No. 132*).

CERATOPHYLLACEAE

CERATOPHYLLUM Linnaeus

Ceratophyllum submersum Llanos Frag. Pl. Filip. (1851) 105 (*Ceratophillum*); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 81, non ? Linn.=**CERATOPHYLLUM DEMERSUM** Linn.

From the material available I am inclined to refer the Philippine form to *Ceratophyllum demersum* Linn. The species is common in shallow lakes and in slow streams in the Philippines.

Illustrative specimen from Pateros, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 785*).

RANUNCULACEAE

NARAVELIA de Candolle

Atragene zeylanica Blanco Fl. Filip. (1837) 461; ed. 2 (1845) 321; ed. 3, 2 (1878) 231, non Linn.=**NARAVELIA LAURIFOLIA** Wall.

This was considered by Fernandez-Villar to be in part *Naravelia laurifolia* Wall. and *N. zeylanica* DC., but the latter species does not extend to the Philippines. I previously considered that the description seemed to include *Naravelia laurifolia* DC. and *Clematis gouriana* Roxb., but the description certainly does not apply in any respect to the latter; I am now of the opinion that Elanco's description covers a single species, and that is *Naravelia laurifolia* Wall., a species widely distributed in the Philippines at low and medium altitudes, but of local occurence.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 885*).

Atragene lobata Llanos Frag. Pl. Filip. (1851) 73 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 57=**NARAVELIA LOBATA** (Llanos) comb. nov. (*Naravelia loheri* Merr. & Rolfe).

This species was reduced by Fernandez-Villar to *Naravelia zeylanica* DC., a species that does not extend to the Philippines. It is certainly the form more recently described by myself and Mr. Rolfe as *Naravelia loheri*. The species is of local occurrence at low altitudes in the settled areas in the provinces near Manila.

Illustrative specimen (a topotype) from Calumpit, Bulacan Province, Luzon, January, 1915, growing in thickets and hedges, and known as *parapit hanguin*, the name cited by Llanos for *Atragene lobata* (*Merrill: Species Blancoanae No. 656*).

MENISPERMACEAE

CISSAMPELOS Linnaeus

CISSAMPELOS PAREIRA Linn.; Blanco Fl. Filip. (1837) 815; ed. 2 (1845) 563; ed. 3, 3 (1879) 227, *t. 432*.

The Linnean species was correctly interpreted by Blanco.

It is common and widely distributed in the settled areas of the Philippines at low and medium altitudes.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914, there known as *calaad* (*Merrill: Species Blancoanae No. 9*).

ANAMIRTA Colebrook

Menispermum cocculus Linn.; Blanco Fl. Filip. (1837) 809; ed. 2 (1845) 557 (*coculus*); ed. 3, 3 (1879) 216=**ANAMIRTA COCCULUS** (Linn.) W. & A.

Blanco's description, for the most part, applies to *Anamirta cocculus*, but he confused with it the species later described as *Arcangelisia lemniscata* Becc.=*A. flava* (Linn.) Merr. (*Menispermum flavum* Linn.). *Anamirta cocculus* has pale or nearly white wood, while *Arcangelisia* has distinctly yellow wood; the former yields the seeds used in poisoning fish, the latter the yellow wood mentioned by Blanco as used in the practice of medicine. Some of the native names cited by Blanco apply to one, some to the other.

Illustrative specimen from Mount Batulao, Batangas Province, Luzon, August, 1911, there known as *ligtang* (*Merrill: Species Blancoanae No. 476*).

TINOSPORA Miers

Menispermum rimosum Blanco Fl. Filip. (1837) 810; ed. 2 (1845) 558; ed. 3, 3 (1879) 217, non Spreng.=**TINOSPORA RUMPHII** Boerl.

Blanco's species was reduced by Fernandez-Villar to *Tinospora crispa* (Linn.) Miers, an allied species that does not appear to occur in the Philippines. Blanco's discussion includes the form distributed herewith, the one with broadly ovate, prominently cordate leaves, having an exceedingly bitter principle, the true *macabuhay;* and the more common Philippine species, with but a slight amount of the bitter principle, *Tinospora reticulata* Miers. This is perhaps the most generally used medicinal plant in the Philippines. In regions subject to a prolonged dry season it is often entirely leafless at the time of anthesis. It is universally known as *macabuhay;* see Merrill, E. D., An Interpretation of Rumphius's Herbarium Amboinense (1917) 220.

Illustrative specimen from Masambong, near Manila, Luzon, March, 1915, flowering specimens without leaves (*Merrill: Species Blancoanae No. 903.*); leaf specimens from the same plant, October, 1916 (*Merrill: Species Blancoanae No. 1003*).

MAGNOLIACEAE

MICHELIA Linnaeus

MICHELIA CHAMPACA Linn.; Blanco Fl. Filip. (1837) 462; ed. 2 (1845) 322; ed. 3, 2 (1878) 232, *t. 191*.

The Linnean species was correctly interpreted by Blanco. It occurs in the Philippines only as a cultivated tree and was probably introduced by the Spaniards. Generally known to the Filipinos as *sampaca*.

Illustrative specimens from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae Nos. 799, 973*).

TALAUMA Jussieu

Magnolia angatensis Blanco Fl. Filip. (1837) 859 (sp. nov.); ed. 2 (1845) 328; ed. 3, 2 (1878) 243=**TALAUMA ANGATENSIS** (Blanco) F.-Vill.

Blanco's material was from Angat, Bulacan Province, Luzon, and the description is unmistakably that of a *Talauma*, the leaves are definitely described as a foot long and four inches wide, and the fruit a "geme," i. e., 16 to 20 cm long. I am of the opinion that Vidal correctly interpreted the species in his Sinopsis, Atlas 11, *t. 3, f. A* (1883), and I am now further of the opinion that both *Talauma luzonensis* Warb. and *Talauma grandiflora* Merr. must be reduced to *Talauma angatensis* (Blanco) F.-Vill.

ANNONACEAE

ALPHONSEA Hooker f. & Thomson

Macanea arborea Blanco Fl. Filip. (1837) 431 (sp. nov.)=**Monodora myristica** Blanco op. cit. ed. 2 (1845) 300; ed. 3, 2 (1878) 193, non Dun.=**ALPHONSEA ARBOREA** (Blanco) Merr. in Philip. Journ. Sci. 10 (1915) Bot. 233 (*Alphonsea philippinensis* Merr., *Monocarpia blancoi* F.-Vill.).

This species is widely distributed in the Philippines at low and medium altitudes, and its synonymy, with citation of numerous specimens, has been discussed by me on the occasion of the original transfer of Blanco's species to *Alphonsea*. It was retained by Fernandez-Villar as a valid species under the name of *Monocarpia blancoi* F.-Vill. *Macanea arborea* Blanco does not appear in Index Kewensis either under *Macanea* or *Macahanea*.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1915, there known as *calai* (*Merrill: Species Blancoanae No. 838*).

UVARIA Linnaeus

Unona setigera Blanco Fl. Filip. (1837) 468 (sp. nov.) = **Uvaria setigera** Blanco op. cit. ed. 2 (1845) 323 (*Uvearia*) (nom. nov.); ed. 3, 2 (1878) 234, *t. 195* = **UVARIA RUFA** Blume.

The Philippine form seems to be referable to Blume's species. It has, however, been described from the Philippines by Presl as *Uvaria solanifolia*. Blanco's description is not good, and his statement "petalos * * * lineares" does not apply. In spite of this discrepancy, I consider that there is no doubt as to the correctness of the identification of *Unona setigera* Blanco. It was reduced by Fernandez-Villar to *Uvaria purpurea* Blume, which it cannot be. It is widely distributed in the Philippines at low altitudes, and is abundant near Manila.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 199*).

Unona camphorata Blanco Fl. Filip. (1837) 468 (sp. nov.); ed. 2 (1845) 326; ed. 3, 2 (1878) 239 = **UVARIA SORZOGONENSIS** Presl.

Unona susong calabao Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 434* = **UVARIA SORZOGONENSIS** Presl.

Blanco's description is very indefinite, and from it alone it is impossible definitely to determine the status of the species. The plant was a large vine, according to his description, and the description certainly applies to an annonaceous plant. The only possible generic reduction that can be made is *Uvaria*, but Blanco's species cannot be *Uvaria dulcis* Dunal, to which it was reduced by Fernandez-Villar. The specific name *camphorata* was taken from the camphor-like odor of certain roots that Blanco saw in the hands of a native, but there is no reason for considering that these roots were from the species described as *Unona camphorata*. As to the native names cited, the Tagalog one, *taghivalas*, properly belongs with the apocynaceous *Parameria philippinensis* Radlk.; the Bicol names *dalaganum* and *dalagao* are unknown to me. *Uvaria sorzogonensis* Presl, is, however, known in parts of Negros as *baluganos*, a name very suggestive of *dalaganao*. As *Uvaria sorsogonensis* Presl is common and widely distributed in the Philippines, Blanco could scarcely have overlooked it, and I think that there is very little doubt but that the reduction here made is the correct disposition of his species. Presl's species, however, may not prove to be specifically distinct from *Uvaria ovalifolia* Blume.

Illustrative specimen from Alabat Island, December, 1916 (*Merrill: Species Blancoanae No. 1057*).

CANANGIUM Baillon

Unona odoratissima Blanco Fl. Filip. (1837) 467 (sp. nov.); ed. 2 (1845) 325; ed. 3, 2 (1878) 239, *t. 221*=**CANANGIUM ODORATUM** (Lam.) Baill. (*Cananga odorata* Hook. f. & Th.).

Unona ossea Blanco Fl. Filip. (1837) 467 (sp. nov.)=**Uvaria ossea** Blanco op. cit. ed. 2 (1845) 322 (comb. nov.); ed. 3, 2 (1878) 233=**CANANGIUM ODORATUM** (Lam.) Baill. (*Cananga odorata* Hook. f. & Th.).

The identity of *Unona odoratissima* Blanco is unmistakable, as it is the common and widely distributed ilang-ilang tree. *Unona ossea* Blanco=*Uvaria ossea* Blanco was reduced by Fernandez-Villar to *Unona discolor* Vahl, which I formerly considered to be the correct disposition of it. However, Vahl's species scarcely occurs in the regions from which Blanco secured his material, and moreover a comparison of his description with specimens of Vahl's species shows that *Unona ossea* Blanco cannot possibly be the same as *Unona discolor*. Blanco compares *Unona ossea* with *Unona odoratissima*, as identical in floral characters with the latter, stating that except in its fragrant fruit it could not be distinguished from ilang-ilang. There is no doubt whatever that *Unona ossea* Blanco is merely a slight variant of the common and widely distributed *Canangium odoratum* Baill.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *ilang-ilang* (*Merrill: Species Blancoanae No. 466*).

POLYALTHIA Blume

Unona cabog Blanco Fl. Filip. (1837) 466 (sp. nov.)=**Unona odorata** Blanco op. cit. ed. 2 (1845) 325 (nom. nov.); ed. 3, 2 (1878) 237, non Dunal=**POLYALTHIA** sp.

Fernandez-Villar reduced this to *Unona desmos* Dunal, which I formerly thought might be the correct disposition of it. It cannot, however, be Dunal's species. The description applies unmistakably to *Polyalthia*, but beyond this I can make no suggestion as to what species was intended by Blanco's very imperfect description.

PHAEANTHUS Hooker f. & Thomson

Uvaria tripetala Blanco Fl. Filip. (1837) 465, non Roxb.=**Unona tripetala** Blanco op. cit. ed. 2 (1845) 324 (*tripelata*) (comb. nov.); ed. 3, 2 (1878) 236=**PHAEANTHUS EBRACTEOLATUS** (Presl) Merr. (*P. cumingii* Miq.; *P. nutans* F.-Vill., non Hook. f. & Th.).

This species is common and widely distributed in the forests of the Philippines at low and medium altitudes.

Illustrative specimen from Camarines Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 305*).

GONIOTHALAMUS Hooker f. & Thomson

Uvaria amuyon Blanco Fl. Filip. (1837) 463 (sp. nov.) = **Unona cauliflora** Blanco op. cit. ed. 2 (1845) 323; ed. 3, 2 (1878) 235 (nom. nov.) = **GONIOTHALAMUS AMUYON** (Blanco) Merr. in Philip. Journ. Sci. 10 (1915) Bot. 264.

This was reduced by Fernandez-Villar to *Melodorum fulgens* Hook. f. & Th., a manifestly wrong reduction, for Blanco's description does not at all apply to the latter species. The present interpretation of the species is undoubtedly correct.

Illustrative specimen from San José, Batangas Province, Luzon, February, 1915, there known as *amuyong* (*Merrill: Species Blancoanae No. 803*).

MITREPHORA Blume

Uvaria lanotan Blanco Fl. Filip. (1837) 464 (sp. nov.) = **Unona ? latifolia** Blanco op. cit. ed. 2 (1845) 324; ed. 3, 2 (1878) 236, non Dunal = **MITREPHORA LANOTAN** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 35 (1906) 71.

Blanco's species was erroneously reduced by Fernandez-Villar to *Goniothalamus giganteus* Hook. f. & Th., a species that does not extend to the Philippines and one to which Blanco's description does not at all apply. In making the original transfer to *Mitrephora* I erroneously included, as a synonym, *Mitrephora ferruginea* Merr. = *M. merrillii* C. B. Rob. = *Griffithianthus merrillii* W. H. Br., and my description in part applies to the latter species. The plant interpreted as *Mitrephora lanotan* agrees perfectly with Blanco's description, is common in the regions from which Blanco secured most of his material, and is also known to the natives as *lanotan*, a name also applied to a number of other annonaceous trees.

Illustrative specimen from Bataan Province, Luzon, June, 1915, *comm. H. Borromeo*, there known as *lanotan* (*Merrill: Species Blancoanae No. 940*).

XYLOPIA Linnaeus

Unona dehiscens Blanco Fl. Filip. (1837) 466 (sp. nov.); ed. 2 (1845) 325 (*dehincens*); ed. 3, 2 (1878) 238 = **XYLOPIA DEHISCENS** (Blanco) **Merr.** (*Xylopia blancoi* Vid.).

Fernandez-Villar erroneously reduced Blanco's species to *Anaxagorea luzonensis* A. Gray, to which Blanco's description does not at all apply. Vidal redescribed it from actual specimens as *Xylopia blancoi*, citing Blanco's species as a synonym. Blanco's description is very poor and imperfect, but his species apparently belongs here. It is found in various parts of Luzon and in the Visayan Islands.

ARTABOTRYS R. Brown

Unona corniculata Blanco Fl. Filip. (1837) 469 (sp. nov.); ed. 2 (1845) 326; ed. 3, 2 (1878) 240=ARTABOTRYS CORNICULATA (Blanco) comb. nov. (*Artabotrys rolfei* Vid.).

Blanco's species was reduced to *Artabotrys suaveolens* Blume by Fernandez-Villar, and it is certainly very closely allied to that species. Vidal, however, has described the Philippine form as a distinct species, *Artabotrys rolfei*, which is manifestly the same as the species described by Blanco as *Unona corniculata*. The oldest specific name is here adopted.

Illustrative specimen from Laguna Province, Luzon, March, 1913 (*Merrill: Species Blancoanae No. 298*).

Uvaria sinensis Blanco Fl. Filip. (1837) 465 (sp. nov.)=**Unona uncinata** Dun.; Blanco op. cit. ed. 2 (1845) 324; ed. 3, 2 (1878) 237, *t. 194*= ARTABOTRYS UNCINATUS (Lam.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 234 (*A. odoratissimus* R. Br.).

This species occurs in the Philippines only as an introduced and occasionally cultivated plant, and Blanco's description was based on cultivated specimens from Pasig.

Illustrative specimens from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae Nos. 784, 964*).

ANNONA Linnaeus

ANNONA RETICULATA Linn.; Blanco Fl. Filip. (1837) 470 (*Anona*); ed. 2 (1845) 327; ed. 3, 2 (1878) 242, *t. 197*.

This species is widely distributed in the Philippines in cultivation, is commonly known as *anonas*, and like *Annona squamosa* L. and *A. reticulata* L. is an early introduction from Mexico.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 93*).

ANNONA MURICATA Linn.; Blanco Fl. Filip. ed. 2 (1845) 326; ed. 3, 2 (1878) 241, *t. 196*.

The Linnean species was correctly interpreted by Blanco; an early introduction into the Philippines from Mexico. It is widely distributed in the Philippines in cultivation and is commonly known here as *guayabanos*.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 198*).

ANNONA SQUAMOSA Linn.; Blanco Fl. Filip. (1837) 469; ed. 2 (1845) 327. ed. 3, 2 (1878) 241, *t. 192*.

The Linnean species was correctly interpreted by Blanco. It was introduced from Mexico by the Spaniards and is now commonly cultivated throughout the Archipelago at low and medium altitudes. It is generally known as *ates*.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 589*).

ANNONACEAE OF UNCERTAIN STATUS

Soala litoralis Blanco Fl. Filip. (1837) 437 (gen. et sp. nov.); ed. 2 (1845) 304; ed. 3, 2 (1878) 199=? *Annonaceae* indet.

A genus and species of very uncertain status, perhaps based on material from two entirely different plants. The description of the flower seems to conform to the *Annonaceae*, near *Uvaria*, but the description of the fruit is certainly not that of an annonaceous plant. Attempts to locate the species through the native name *soal* resulted in the information that the name is unknown even in Bauang, the locality in which Blanco observed the species; but Blanco states in the original description that it was scarcely known to the natives. Fernandez-Villar reduced it to *Cyathocalyx zeylanicus* Champ., which is manifestly an erroneous disposition of it.

MYRISTICACEAE

MYRISTICA Linnaeus

Myristica luzonica Blanco Fl. Filip. (1837) 664 (sp. nov.); ed. 2 (1845) 462, 463; ed. 3, 3 (1879) 69, 70=**MYRISTICA PHILIPPENSIS** Lam.

This species is common and widely distributed in the Philippines, growing in the primeval forest at low and medium altitudes. Its commonest Tagalog name is *duguan*, but this name is also applied to several other species of the same genus and to those of allied genera.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 178*).

KNEMA Loureiro

Sterculia glomerata Blanco Fl. Filip. (1837) 764 (sp. nov.); ed. 2 (1845) 525; ed. 3, 3 (1879) 164=**KNEMA GLOMERATA** (Blanco) Merr. in Journ. Str. Branch Roy. As. Soc. (1917) 81 [*Myristica heterophylla* F.-Vill. Nov. App. (1880) 178; *M. corticosa* F.-Vill. op. cit., non Hook. f. & Th.; *Knema heterophylla* Warb. in Nov. Act. Acad. Nat. **68** (1897) 573, *t. 25, f. 1, 2.*].

Sterculia decandra Blanco Fl. Filip. (1837) 766 (sp. nov.); ed. 2 (1845) 526; ed. 3, 3 (1879) 166=**KNEMA GLOMERATA** (Blanco) Merr. (*K. heterophylla* Warb.).

This species is common and widely distributed in the Philippines, and although Blanco's descriptions of both species are short and imperfect they apply here in all particulars; moreover there is no other species known to me from the regions from which Blanco received the most of his material to which his descriptions apply. In Bataan Province, Luzon, it is still known as *tambalao* and as *hindurugu*. Fernandez-Villar erroneously re-

duced the former to *Myristica corticosa* Hook. f. & Th. and the latter to *Myristica intermedia* Blume, neither of which occurs in the Philippines.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 504*).

LAURACEAE

CINNAMOMUM Blume

Laurus cinnamomum Linn.; Blanco Fl. Filip. (1837) 319; ed. 2 (1845) 225; ed. 3, 2 (1878) 37=**CINNAMOMUM ZEYLANICUM** Blume Bijdr. (1825) 568; Nees in Wall. Pl. As. Rar. 2 (1831) 74.

Blanco apparently correctly interpreted the Linnean species, although Fernandez-Villar reduced *Laurus cinnamomum* Blanco to *Cinnamomum burmanni* Blume; the latter species has been reported from the Philippines by Nees. Blanco based his description on cultivated specimens, and the form distributed herewith is certainly the one Blanco described. It is occasionally found in towns in the Philippines in cultivation and was undoubtedly introduced into the Archipelago by the Spaniards. It is known in the Philippines only by its Spanish name, *canela*.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 687*).

Laurus culilaban Blanco Fl. Filip. (1837) 315; ed. 2 (1845) 222; ed. 3, 2 (1878) 51, non Linn.=**CINNAMOMUM MERCADOI** Vid.

Laurus cassia Blanco op. cit. 317; 223; 53, non Linn=**CINNAMOMUM MERCADOI** Vid.

This sylvan species is common and widely distributed in the Philippines at low and medium altitudes. Its most common native name is *caliñgag*, and in Bataan Province it is still known also as *samilin*, the former name being cited by Blanco under *Laurus culilaban* and the latter under *L. cassia*. Blanco's *Laurus cassia* was erroneously reduced by Fernandez-Villar to *Cinnamomum zeylanicum* var. *cassia* Nees, and *Laurus culilaban* was erroneously reduced to *C. pauciflorum* Nees and *C. tamala* Nees & Eberm., neither of which occurs in the Philippines. Blanco's descriptions are certainly of but a single species.

Illustrative specimens from Angat, Bulacan Province, Luzon, December, 1914, there known as *caliñgag* (*Merrill: Species Blancoanae No. 758*); Antipolo, Rizal Province, Luzon, June, 1916 (*Merrill: Species Blancoanae No. 971*).

PERSEA Gaertner

Laurus persea Linn.; Blanco Fl. Filip. ed. 2 (1845) 224; ed. 3, 2 (1878) 56=**PERSEA AMERICANA** Mill. (*P. gratissima* Gaertn.).

Blanco described the avocado from specimens cultivated in

Santa Ana, now a part of the city of Manila. Vidal (Rev. Pl. Vasc. Filip. 11) states that it was at that date (1886) unknown in the Philippines. In 1902, however, a very old tree was located in the small park of the Cuartel de España in the Walled City, Manila, which a few years later was destroyed by a typhoon. In 1902 or 1903 it was re-introduced into the Philippines from Honolulu. *Aquacate* admitted by Kamel, Ray Hist. Pl. 3 (1704) App. 59, undoubtedly refers to this species, indicating that it had been introduced into the Philippines previous to the year 1700.

Illustrative specimen from cultivated specimens, Manila, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 874*).

NOTHAPHOEBE Blume

Aiouea (Ajovea) malabonga Blanco Fl. Filip. (1837) 233 (sp. nov.) = **Laurus hexandra** Blanco op. cit. ed. 2 (1845) 222; ed. 3, 2 (1878) 52, non Willd., nec Spreng. = **NOTHAPHOEBE MALABONGA** (Blanco) Merr.

This species was reduced by Fernandez-Villar to *Iteadaphne confusa* Blume, a species unknown from the Philippines; Blanco's description does not apply to it. The form that Blanco described in the first edition of his Flora de Filipinas he erroneously reduced in the second edition to *Laurus hexandra* Willd; it seems to be a valid species closely allied to the Malayan *Nothaphoebe umbelliflora* Blume. Blanco describes the species as having 6 stamens, but otherwise his description is excellent and agrees with the specimens referred here. The species is widely distributed in the Philippines, but the numerous specimens have been previously confused with *Cryptocarya*.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, September, 1914, *comm. A. Villamil*, there known as *malabonga* (*Merrill: Species Blancoanae No. 121*).

LITSEA Lamarck

Sebifera glutinosa Lour.; Blanco Fl. Filip. (1837) 819; ed. 2 (1845) 566; ed. 3, 3 (1879) 234, *t. 360* = **LITSEA GLUTINOSA** (Lour.) C. B. Rob. (*L. chinensis* Lam., *L. tersa* Merr., non *Glabraria tersa* Linn.).

This species is common and widely distributed in the Philippines at low altitudes and presents considerable variation. Loureiro's specific name is apparently the oldest valid one for the species, and Blanco was undoubtedly correct in referring the Philippine plant to *Sebifera glutinosa* Lour. Its common Tagalog name is *puso-puso*.

Illustrative specimen from Los Baños, Laguna Province, Luzon, *comm. F. C. Gates*, March, 1914 (*Merrill: Species Blancoanae No. 647*).

Sebifera balongai Blanco Fl. Filip. (1837) 820 (sp. nov.); ed. 2 (1845) 567; ed. 3, 3 (1879) 235 (*balongay*) =**LITSEA GLUTINOSA** (Lour.) C. B. Rob., var.

This was reduced by Fernandez-Villar to *Litsea litoralis* F.-Vill. (*Tetranthera litoralis* Blume), which is apparently merely a glabrous or nearly glabrous form of *Litsea glutinosa* (Lour.) C. B. Rob. I can suggest no other disposition of Blanco's species and am of the opinion that Fernandez-Villar was correct in this disposition of it. The name *balongai* cited by Blanco is unknown to me as applied to the *Lauraceae*, but Blanco's description is certainly that of a *Litsea*. He compares it with his description of *Sebifera glutinosa*, i. e., *Litsea glutinosa* (Lour.) C. B. Rob.

Olax baticulin Blanco Fl. Filip. ed. 2 (1845) 589 (sp. nov.); ed. 3, 1 (1877) 38=**LITSEA** sp.

There is grave doubt as to whether this species should be considered as published in the second edition, as the generic name *Olax* is capitalized as usual in Blanco's work, but is followed by a period, and the word *baticulin* appears in ordinary type, not differentiated from the description; it is, however, definitely published in the third edition The description is entirely inadequate, and my identification of it has been based chiefly on the fact that the illustrative specimens are from the species known in the vicinity of Pañgil, Laguna, as *baticulin*, and from which timber sold under that name is secured. The name *baticulin* is rather promiscuously applied to a number of different lauraceous trees, especially in the genus *Litsea*. *Olax baticulin* was reduced by Fernandez-Villar to *Litsea obtusata* (Meissn.) F.-Vill., a species that does not extend to the Philippines. The species, as I interpret it, seems to be very closely allied to *Litsea albayana* Vid., but I am unwilling to replace Vidal's specific name until flowering specimens of *Olax baticulin* Blanco, or the species as I interpret it, are secured.

Illustrative specimen from near Pañgil, Laguna Province, Luzon, *comm. F. W. Foxworthy*, January, 1915 (*Merrill: Species Blancoanae No. 1006*).

CRYPTOCARYA R. Brown

Salgada lauriflora Blanco Fl. Filip. ed. 2 (1845) 221 (gen. et sp. nov.); ed. 3, 2 (1878) 50=**CRYPTOCARYA LAURIFLORA** (Blanco) Merr. in Philip. Journ. Sci. 4 (1909) Bot. 254 (*Eusideroxylon borneense* F.-Vill., non *Bihania borneensis* Meissn; *Cryptocarya luzoniensis* Vid.).

This species is rather widely distributed in Luzon at low and medium altitudes. Blanco's description applies unmistakably to *Cryptocarya* as here interpreted.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1913 (*Merrill: Species Blancoanae No. 56*).

Laurus martinicensis Blanco Fl. Filip. (1837) 317; ed. 2 (1845) 223; ed. 3, 2 (1878) 53, non Jacq.=? **CRYPTOCARYA AMPLA** Merr.

Fernandez-Villar reduced this to *Beilschmiedia madang* Blume, a species that does not extend to the Philippines, and one to which Blanco's description does not at all apply. The form he described is certainly a *Cryptocarya*, and taking into consideration all the data given by Blanco is, I think, *C. ampla* Merr. The description is not sufficiently definite to be sure of the correctness of the reduction.

CASSYTHA Linnaeus

CASSYTHA FILIFORMIS Linn.; Blanco Fl. Filip. (1837) 321, ed. 2 (1845) 226, ed. 3, 2 (1878) 58.

The Linnean species was correctly interpreted by Blanco; it is common and widely distributed in the Philippines along the seashore.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 95*).

LAURACEAE OF UNCERTAIN STATUS

Laurus lanosa Blanco Fl. Filip. (1837) 318 (sp. nov.); ed. 2 (1845) 224; ed. 3, 2 (1878) 54=*Lauraceae* indet.

Fernandez-Villar reduced Blanco's species to *Litsea villosa* Blume, but the characters assigned to it by Blanco do not at all conform with those of Blume's species. The description is too indefinite to warrant suggesting a reduction other than that it certainly belongs in the *Lauraceae*. The description of the inflorescence as terminal indicates that it can scarcely have been a *Litsea*. It is possibly a species of *Cryptocarya*.

HERNANDIACEAE

GYROCARPUS Jacquin

Gyrocarpus lobatus Blanco Fl. Filip. ed. 2 (1845) 54 (sp. nov.); ed. 3, 1 (1877) 103=**GYROCARPUS AMERICANUS** Jacq.

This species was reduced by Fernandez-Villar to *Gyrocarpus jacquinii* Gaertn.=*G. americanus* Jacq. It is widely distributed in the Philippines at low altitudes, but is nowhere abundant.

Illustrative specimen from Angat, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 755*).

HERNANDIA Linnaeus

Hernandia sonora Blanco Fl. Filip. (1837) 689; ed. 2 (1845) 478; ed. 3, 3 (1879) 93, non Linn.=**HERNANDIA PELTATA** Meissn.

This species is commonly distributed along the seashore from

central Luzon southward, but not as yet reported from the shores of northern Luzon. *Hernandia sonora* Linn. was based on both oriental and occidental references, but the species is typified by the American plant, so that Blanco was in part correct in referring the Philippine form to *H. sonora* Linn. *H. peltata* Meissn. is very closely allied to the older *H. ovigera* Linn., and may have to be reduced to the Linnean species.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 530*).

ILLIGERA Blume

Gronovia ternata Blanco Fl. Filip. (1837) 186 (sp. nov.); ed. 2 (1845) 132; ed. 3, 1 (1877) 236=**ILLIGERA LUZONENSIS** (Presl) Merr.

Halesia ternata Blanco op. cit. 399 (sp. nov.); 279; 2: 153=**ILLIGERA LUZONENSIS** (Presl) Merr.

The species is widely distributed in Luzon and has several synonyms. Its oldest specific name, however, is supplied by *Henschelia luzonensis* Presl Rel. Haenk 2 (1831) 81, *t. 63*, the type of which I have seen in the Prague herbarium. Presl's description is faulty, and his figures of the floral details are erroneous in some particulars. For this reason Mr. Dunn took up Blanco's specific name in preference to Presl's; see Journ. Linn. Soc. Bot. 38 (1908) 294. The other synonyms are *Illigera ternata* Dunn, *I. dubia* F.-Vill. non Span., *I. meyeniana* Kunth, and *I. appendiculata* Vid., non Blume. There is no doubt in my mind that *Gronovia ternata* Blanco and *Halesia ternata* Blanco represent the same species. Both are described in the same work, the former from flowering specimens, the latter from fruiting specimens.

Illustrative specimens from Angat, Bulacan Province, Luzon, August, December, 1913 (*Merrill: Species Blancoanae Nos. 297, 663*).

PAPAVERACEAE

ARGEMONE Linnaeus

ARGEMONE MEXICANA Linn.; Blanco Fl. Filip. (1837) 454; ed. 2 (1845) 316; ed. 3, 2 (1878) 220, *t. 187*.

The Linnean species was correctly interpreted by Blanco. It was introduced from Mexico by the Spaniards at an early date in colonial history either as an ornamental plant or for its medicinal properties. It is now widely distributed in the Philippines, growing especially about buildings and in vacant lots in towns, in waste places, etc.

Illustrative specimen from Manila, Luzon (*Merrill: Species Blancoanae No. 304*).

CRUCIFERAE

CARDAMINE Linnaeus

Cardamine glandulosa Blanco Fl. Filip. (1837) 521 (sp. nov.) = **Cardamine impatiens** (?) Blanco op. cit. ed. 2 (1845) 363; ed. 3, 2 (1879) 306, non Linn. = **NASTURTIUM INDICUM** (Linn.) DC.

This species is widely distributed in the Philippines, extending from sea level to an altitude of at least 1,600 meters. It is nowhere abundant and is usually found along ditches and small streams.

Illustrative specimen from Antipolo, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 553*).

BRASSICA Linnaeus

Sinapis sinensis Blanco Fl. Filip. (1837) 520 (non Gmel.?) = **Sinapis juncea** Linn.; Blanco op. cit. ed. 2 (1845) 362; ed. 3, 2 (1878) 304 = **BRASSICA JUNCEA** (Linn.) Coss.

Brassica orientalis Blanco op. cit. 519; 361; 303, non Linn. = **BRASSICA JUNCEA** (Linn.) Coss.

The form originally described by Blanco as *Sinapis sinensis*, which may or may not be the same as *Sinapis sinensis* Gmel., and later as *Sinapis juncea* Linn., is certainly only a form of *Brassica juncea* (Linn.) Coss., where it was placed by Fernandez-Villar. *Brassica orientalis* Blanco seems to be merely a dwarfed form of *B. juncea* (Linn.) Coss., although Fernandez-Villar reduced it to *Brassica nigra* Koch, a species not definitely known from the Philippines.

Illustrative specimen from Alabat Island, December, 1916 (*Merrill: Species Blancoanae No. 1056*).

Sinapis brassicata Blanco Fl. Filip. ed. 2 (1845) 362; ed. 3, 2 (1879) 305, non ? Linn. = **BRASSICA JUNCEA** (Linn.) Coss. var.

The form I have interpreted as *Sinapis brassicata* Blanco is the plant that has long been cultivated by Chinese, and, to a less degree, by native gardeners, under the name of *pechai* or *petchai*. This form is extensively cultivated about Pasig and is undoubtedly the plant intended by Blanco; it is perhaps *Brassica pekinensis* (Lour.) Skeels. By Fernandez-Villar it was referred to *Brassica campestris* Linn.

Illustrative specimen from Pasig, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 770*).

CAPPARIDACEAE

GYNANDROPSIS de Candolle

Cleome pentaphylla Blanco Fl. Filip. (1837) 523, non Linn.=**Cleome gigantea** (?) Blanco op. cit. ed. 2 (1845) 364; ed. 3, 2 (1879) 307, *t. 234*, non Linn.=**GYNANDROPSIS SPECIOSA** (HBK.) DC.

Blanco's specimens were probably from cultivated plants, as the species was certainly introduced into the Philippines for ornamental purposes. At the present time it is of very local occurrence in the Archipelago, and the plants now found in the Philippines may have been derived from very recently imported seeds. The name *araña* (Sp. "spider"), cited by Blanco for this species, is now universally used in Manila for *Hibiscus schizopetalus* Hook.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 149*).

Cleome alliacea Blanco Fl. Filip. (1837) 522 (sp. nov.)=**Cleome alliodora** Blanco op. cit. ed. 2 (1845) 363 (nom. nov.); ed. 3, 2 (1879) 307, *t. 233*=**GYNANDROPSIS PENTAPHYLLA** (Linn.) DC. (*Pedicellaria pentaphylla* Schrank).

This species is widely distributed in the Philippines at low altitudes. It grows in open waste places in and about towns and along the seashore in some regions. It has all the appearance of an introduced weed and is undoubtedly an accidentally introduced plant in the Philippines.

Illustrative specimen from Pasay, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 747*).

POLANISIA Rafinesque

Cleome viscosa Linn.; Blanco Fl. Filip. (1837) 522=**POLANISIA VISCOSA** (Linn.) DC.; Blanco op. cit. ed. 2 (1845) 364; ed. 3, 2 (1879) 308.

A common and widely distributed weed in the Philippines, certainly introduced. The Linnean species was correctly interpreted by Blanco.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 228*).

CRATAEVA Linnaeus

CRATAEVA RELIGIOSA Forst.; Blanco Fl. Filip. (1837) 399; ed. 2 (1845) 279; ed. 3, 2 (1878) 154, *t. 176*.

Forster's species, as I understand it, was correctly interpreted by Blanco. It is of local occurrence in the Philippines.

Illustrative specimens from coral limestone cliffs, Pabellones Islands, Taytay Bay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 370*); Cavite Province, Luzon, April, 1915 (*Merrill: Species Blancoanae No. 914*).

CAPPARIS Linnaeus

Capparis nemorosa Blanco Fl. Filip. (1837) 438 (sp. nov.)=**Capparis micracantha** Blanco op. cit. ed. 2 (1845) 305; ed. 3, 2 (1878) 200, *t. 178*, non DC.=**CAPPARIS HORRIDA** Linn.

Capparis linearis Blanco op. cit. 438 (sp. nov.), 305, 200=**CAPPARIS HORRIDA** Linn.

This species is common and widely distributed in the Philippines at low altitudes, and Blanco's descriptions of both *C. nemorosa* and *C. linearis* apply fairly closely to the Philippine form so interpreted. In a note following the description of *Capparis nemorosa* he unmistakably describes the true *C. micracantha* DC., which is commonly known to the Tagalogs as *halobagat*, and which is common and widely distributed in the Philippines at low altitudes. Fernandez-Villar reduced *Capparis linearis* Blanco to *C. viminea* Hook. f. & Th., a species that does not extend to the Philippines. Although Blanco's description is very short, incomplete, and entirely unsatisfactory, I have no doubt but that he had merely a form of *C. horrida* Linn.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 236*).

Capparis baducca Blanco Fl. Filip. (1837) 438, non Linn.=**Capparis mariana** Jacq.; Blanco op. cit. ed. 2 (1845) 305; ed. 3, 2 (1878) 201, *t. 179*=**CAPPARIS CORDIFOLIA** Lam.

This species, introduced from Guam, is sparingly cultivated in the towns of Parañaque and Malabon, near Manila, and perhaps in other places. The types of both *Capparis cordifolia* Lam. (1785) and *C. mariana* Jacq. (1797) were from Guam, and the earlier name is here accepted. The species has been reduced by K. Schumann, perhaps correctly, as a variety of the European *Capparis spinosa* Linn.

Illustrative specimen from Malabon, Rizal Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 516*).

Crataeva octandra Blanco Fl. Filip. (1837) 400 (sp. nov.); ed. 2 (1845) 280; ed. 3, 2 (1878) 155, non Jacq.=**CAPPARIS LUZONENSIS** Turcz.

Blanco's specimens were from Piddig, Ilocos Norte Province, Luzon, and his description calls for an unarmed species with eight stamens, characters uncommon in *Capparis*. The type of *Capparis luzonensis* Turcz. was from the Ilocos Province, Luzon, and Cuming's specimen is armed with short spines. The species is represented by a number of specimens from northern Luzon, some of which are armed, and some of which are unarmed, and as I cannot detect any other differences between the specimens I am constrained to consider them forms of the same species.

Fernandez-Villar was certainly wrong in reducing Blanco's species to *Capparis floribunda* Wall.

Capparis odorata Blanco Fl. Filip. (1837) 439 (sp. nov.); ed. 2 (1845) 305; ed. 3, 2 (1878) 201=**CAPPARIS MICRACANTHA** DC.

Capparis halobagat Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 180*=**CAPPARIS MICRACANTHA** DC.

Blanco's description is so very imperfect that even Fernandez-Villar made no attempt to reduce it. I have no doubt that the form intended by Blanco is the common and widely distributed *Capparis micracantha* DC., which Blanco otherwise described as *halobagat* in the discussion following his *Capparis nemorosa.*

Illustrative specimen from Rizal Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1025*).

MORINGACEAE

MORINGA Jussieu

MORINGA OLEIFERA Lam.; Blanco Fl. Filip. (1837) 341; ed. 2 (1845) 238; ed. 3, 2 (1878) 80, *t. 125.*

Lamarck's species was correctly interpreted by Blanco, and his specific name is older than the more commonly used *Moringa pterygosperma* Gaertner. The species is commonly cultivated throughout the Philippines at low and medium altitudes, is not a native of the Archipelago, but was certainly introduced in prehistoric times.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 62*).

NEPENTHACEAE

NEPENTHES Linnaeus

NEPENTHES ALATA Blanco Fl. Filip. (1837) 805 (sp. nov.); ed. 2 (1845) 555; ed. 3, 3 (1879) 214.

This species is a valid one and is at present known only from the Philippine Islands. It is widely distributed in the Archipelago, occurring from northern Luzon to Mindanao, in the mossy forest on the higher mountains, altitude 800 to 2,000 meters.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, June, 1914, *comm. V. Sulit* (*Merrill: Species Blancoanae No. 507*).

NEPENTHES VENTRICOSA Blanco Fl. Filip. (1837) 807 (sp. nov.); 2 (1845) 556; ed. 3, 3 (1879) 215.

A valid characteristic species of rather wide distribution in Luzon, but much less common than is *Nepenthes alata* Blanco.

DROSERACEAE

DROSERA Linnaeus

Drosera hexagynia Blanco Fl. Filip. (1837) 226 (*hexaginia*) (sp. nov.); ed. 2 (1845) 159; ed. 3, 1 (1877) 186=**DROSERA INDICA** Linn.

This reduction was made by Fernandez-Villar and is certainly the correct disposition of Blanco's species. *Drosera indica* Linn. is of very local occurrence in the Philippines, but has been collected several times at low altitudes in different parts of Luzon.

CRASSULACEAE

BRYOPHYLLUM Salisbury

Cotyledon paniculata Blanco Fl. Filip. (1837) 381, non Linn. f., nec Thunb.=**Bryophyllum germinans** Blanco op. cit. ed. 2 (1845) 220 (sp. nov.); ed. 3, 2 (1878) 47, *t. 147*=**BRYOPHYLLUM PINNATUM** (Lam.) Kurz (*B. calycinum* Salisb.).

This species is widely distributed in the Philippines in the settled areas, often very abundant, especially in dry places in regions subject to a long dry season, sometimes cultivated about houses of the natives. It is certainly not a native of the Philippines, but was probably of prehistoric introduction here.

Illustrative specimen from Manila, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 829*).

KALANCHOE Adanson

Cotyledon serrata Blanco Fl. Filip. (1837) 382, non Linn.=**Bryophyllum serratum** Blanco op. cit. ed. 2 (1845) 220 (comb. nov.); ed. 3, 2 (1878) 48, *t. 146* (as *K. laciniata* DC.)=**KALANCHOE LACINIATA** DC.

Cotyledon lanceolata Blanco Fl. Filip. (1837) 382, non Forsk.=**Bryophyllum triangulare** Banco op. cit. ed. 2 (1845) 221 (sp. nov.); ed. 3, 2 (1878) 48=**KALANCHOE LACINIATA** DC.

Blanco's descriptions are both short and imperfect but manifestly apply to *Kalanchoe*. Fernandez-Villar reduced the former to *Kalanchoe laciniata* DC., and the latter to *K. spathulata* DC. but I consider that both apply to the former. This particular form is found in the Philippines only in cultivation, and then very rarely.

Illustrative specimens from cultivated plants, Manila, Luzon, March, 1915 (*Merrill: Species Blancoanae Nos. 900, 983*).

PITTOSPORACEAE

PITTOSPORUM Banks

Aquilaria pentandra Blanco Fl. Filip. (1837) 373 (sp. nov.)=**Limonia laureola** Blanco op. cit. ed. 2 (1845) 251; ed. 3, 2 (1878) 101, *t. 128*, non DC.=**PITTOSPORUM PENTANDRUM** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 19 (*P. fernandezii* Vid.).

Bursaria inermis Azaola in Blanco Fl. Filip. ed. 2 (1845) 124 (sp. nov.); ed. 3, 1 (1877) 222=**PITTOSPORUM PENTANDRUM** (Blanco) Merr.

This species is common and widely distributed in the Philippines, especially in thickets and in second-growth forests. It is very widely known by its Tagalog name *mamalis*, cited by Blanco. Gagnepain, Journ de Bot. (1908) 226, considers *Pittosporum brachysepalum* Turcz., which I reduced to Blanco's species, to represent a distinct form. I consider this species to be also the most likely reduction of Azaola's species which Fernandez-Villar reduced to *Pittosporum ferrugineum* Ait., one that is not known to extend to the Philippines. Azaola's description is very short and imperfect and, it must be confessed, does not apply in all characters.

Illustrative specimen from Angat, Bulacan Province, Luzon, August, 1913 (*Merrill: Species Blancoanae No. 293*).

ROSACEAE

PARINARIUM Aublet

Alamag Blanco Fl. Filip. (1837) 550; ed. 2 (1845) 369; ed. 3, 2 (1879) 319=**PARINARIUM CORYMBOSUM** (Blume) Miq. (*P. salicifolium* Presl, *P. griffithianum* Benth.).

Pasac Blanco Fl. Filip. (1837) 848; ed. 2 (1845) 586; ed. 3, 3 (1879) 270=? **PARINARIUM CORYMBOSUM** (Blume) Miq.

Blanco's descriptions of both *Alamag* and *Pasac* are imperfect, but the former manifestly applies to *Parinarium corymbosum* Miq., which is common and widely distributed in the Philippines; its nearly universal Tagalog name to-day is *liusin*, which Blanco gives as *luyusin*. The description of *Pasac* does not apply so well, but this reduction is reasonably certain. It is perhaps unnecessary to record here that Blanco manifestly did not intend *Alamag* and *Pasac* as new genera, but simply described the species under the native names, being unable to refer the plants to their proper genera or to their proper places in the Linnean system.

Illustrative specimen from Laguna Province, Luzon, February, 1912 (*Merrill: Species Blancoanae No. 315*).

RUBUS Linnaeus

RUBUS MOLUCCANUS Linn.; Blanco Fl. Filip. (1837) 428; ed. 2 (1845) 298; ed. 3, 2 (1878) 190, *t. 393*.

The Linnean species was certainly correctly interpreted by Blanco. It is common and widely distributed in the Philippines at medium and higher altitudes, ascending to at least an altitude of 1,800 meters.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 161*).

Rubus jamaicensis Blanco Fl. Filip. (1837) 427, non Linn.=**Rubus comintanus** Blanco op. cit. ed. 2 (1845) 298 (sp. nov.); ed. 3, 2 (1878) 190 *t. 416* (as *Rubus idaeus* Blanco)=**RUBUS ROSAEFOLIUS** Sm.

Blanco identified his Philippine material with the West Indian *Rubus jamaicensis* Linn. in the first edition of his Flora de Filipinas, but in the second edition he described the same form as a new species, *Rubus comintanus*. The species is manifestly *Rubus rosaefolius* Sm., which is widely distributed in the Philippines, extending from near sea level in some localities to an altitude of at least 1,800 meters.

Illustrative specimen from Montalban, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 721*).

PRUNUS Linnaeus

Prunus armeniaca Blanco Fl. Filip. ed. 2 (1845) 296; ed. 3, 2 (1878) 185, non Linn.=**PRUNUS** sp.

Fernandez-Villar reduced this to *Prunus triflora* Roxb., which may or may not be the proper disposition of it, although it is certainly a *Prunus*. It was described from specimens cultivated in a garden in Manila, with the further statement that it was also cultivated in Cagayan Province, Luzon; Blanco supposed that it had been introduced from China.

CONNARACEAE

SANTALOIDES O. Kuntze

Cnestis erecta Blanco Fl. Filip. (1837) 387 (sp. nov.)=**Omphalobium pictum** Blanco op. cit. ed. 2 (1845) 271; ed. 3, 2 (1878) 139=**Rourea erecta** (Blanco) Merr. in Philip. Journ. Sci. 4 (1910) Bot. 125=**SANTALOIDES ERECTUM** (Blanco) Schellenb. Beitr. Anat. Syst. Connar. (1910) 51; Fedde Repert. 10 (1911) 247.

Cnestis glabra Blanco op. cit. 387 (sp. nov.); 271; 138, *t. 140*, non Linn.=**Rourea erecta** (Blanco) Merr.=**SANTALOIDES ERECTUM** (Blanco) Schellenb.

This species is widely distributed at low and medium altitudes in Luzon, extending southward to Leyte. Synonyms are *Rourea multiflora* Planch., *Omphalobium obliquum* Presl, *Connarus obliquus* Walp., *Connarus paniculatus* F.-Vill. non Roxb., and *C. monocarpus* F.-Vill., non Linn. *Cnestis erecta* Blanco was erroneously reduced by Fernandez-Villar to *Connarus monocarpus* Linn., and *C. glabra* to *Connarus paniculatus* Roxb.; neither *Connarus monocarpus* Linn., nor *C. paniculatus* Roxb. occurs in the Philippines.

Illustrative specimen from Rizal Province, Luzon (*Merrill: Species Blancoanae No. 798*).

Cnestis volubilis Blanco Fl. Filip. (1837) 385 (sp. nov.) = **Cnestis trifolia** Blanco Fl. Filip. ed. 2 (1845) 270 (nom. nov.); ed. 3, 2 (1878) 136, non Lam. = **Rourea volubilis** Merr. (*R. heterophylla* Planch.) = **SANTALOIDES VOLUBILE** (Blanco) Schellenb.

The species is fairly common and is of wide distribution in the Philippines. It is distinctly variable in its vegetative characters, not only in the number of its leaflets, but in their size and shape.

Illustrative specimens from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 368*).

AGELAEA Solander

Castañola trinervis Llanos in Mem. Acad. Cienc. Madr. 2 (1859) 505; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 103 = **AGELAEA TRINERVIS** (Llanos) comb. nov.

Fernandez-Villar reduced this to *Connarus monocarpus* Linn., a species that does not extend to the Philippines. The description applies unmistakably to some trifoliolate species of *Connaraceae*, and the only species of the family known from the Philippines that conforms with Llanos's description is *Agelaea*, and the Philippine form that has been referred to *A. wallichii* Hook. f. This is widely distributed in the Philippines at low altitudes, Llanos's material being from Angat, Bulacan Province, Luzon. It appears to be specifically distinct from *Agelaea wallichii* Hook. f.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, August, 1917, *comm. C. Mabesa* (*Merrill: Species Blancoanae No. 1059*).

CNESTIS Jussieu

CNESTIS DIFFUSA Blanco Fl. Filip. (1837) 386 (sp. nov.) = **Cnestis polyphylla** Blanco op. cit. ed. 2 (1845) 270 (*poliphylla*); ed. 3, 2 (1878) 137, non Lam. = **Cnestis corniculata** Blanco op. cit. 386; 270; 138, non Lam. (*C. ramiflora* Griff., 1854).

The species is widely distributed in Luzon, and there is no doubt in my mind but that the two species Blanco described are identical. Blanco's specific name, *Cnestis diffusa*, is apparently the oldest valid one for the species. For a discussion of the synonymy see Merrill in Philip. Journ. Sci. 4 (1909) Bot. 127.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 252*).

LEGUMINOSAE

MIMOSOIDEAE

PITHECOLOBIUM Martius

Mimosa unguis-cati Blanco Fl. Filip. (1837) 731, non Linn.=**Inga lanceolata** Blanco op. cit. ed. 2 (1845) 370 (sp. nov.); ed. 3, 2 (1879) 322, *t. 237*, non HBK.=**PITHECOLOBIUM DULCE** (Roxb.) Benth.

This species is common and widely distributed in the Philippines and in many localities is thoroughly naturalized, occurring in great abundance along gravel bars in the beds of streams in parts of northern Luzon. The common native names in the Philippines, *camanchile, camonsil,* etc., are corruptions of its ancient Mexican name *quamochitl.*

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 258*).

Mimosa scutifera Blanco Fl. Filip. (1837) 735 (sp. nov.); ed. 2 (1845) 507; ed. 3, 3 (1879) 138, *t. 438*=**PITHECOLOBIUM SCUTIFERUM** (Blanco) Benth.

This species is widely distributed in the Philippines at low and medium altitudes and is entirely distinct from the Malayan *Pithecolobium lobatum* Benth. to which it has been reduced. Its common Tagalog name is *anagap*, as cited by Blanco.

Illustrative specimen from Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 328*).

Mimosa scutifera [var. **casai**] Blanco Fl. Filip. (1837) 736; ed. 2 (1845) 508; ed. 3, 3 (1879) 138, *t. 447*=**PITHECOLOBIUM SUBACUTUM** Benth.

This form is described by Blanco without definitely assigning to it any specific or varietal name. It is of wide distribution in the Philippines. It should be compared critically with *Pithecolobium montanum* Benth.

Illustrative specimen from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 461*).

ALBIZZIA Durazzini

Mimosa acle Blanco Fl. Filip. (1837) 738 (sp. nov.); ed. 2 (1845) 509; ed. 3, 3 (1879) 140=**ALBIZZIA ACLE** (Blanco) Merr. in Philip. Journ. Sci. 5 (1910) Bot. 25 (*Pithecolobium acle* Vid.).

This species is common and widely distributed in the Philippines, is universally and exclusively known to the Tagalogs as *acle*, and is the source of the timber known commercially in the Philippines under this name. It was erroneously reduced by Fernandez-Villar to *Xylia dolabriformis* Benth., with which it

has nothing in common; *Xylia dolabriformis* moreover does not occur in the Philippines.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, flowers March, 1915, there known as *acle* (*Merrill: Species Blancoanae No. 743*).

Mimosa carisquis Blanco Fl. Filip. (1837) 734 (sp. nov.); ed. 2 (1845) 507; ed. 3, 3 (1879) 137=**ALBIZZIA LEBBEKOIDES** (DC.) Benth.

This species is known as *carisquis* by the Ilocanos and as *malaghanip* by the Tagalogs (Rizal Province). It is widely distributed in the northern part of the Philippines. By Fernandez-Villar Blanco's *Mimosa carisquis* was reduced to *Albizzia julibrissin* Durazz., which is certainly incorrect. While *Mimosa carisquis* Blanco is apparently identical with the current conception of *Albizzia lebbekoides*, there is some reason for considering that the latter species has been misinterpreted, as Bentham states that the pod is said to be half as broad again as in *A. lebbeck*, which is decidedly not true of *Mimosa carisquis* Blanco.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 706*).

Mimosa coriaria Blanco Fl. Filip. (1837) 734 (sp. nov.); ed. 2 (1845) 506; ed. 3, 3 (1879) 136=**ALBIZZIA PROCERA** (Roxb.) Benth.

The species is common in those parts of the Philippines having a long, well-defined dry season.

Illustrative specimen from Angat, Bulacan Province, Luzon, August, 1913 (*Merrill: Species Blancoanae No. 295*).

Mimosa lebbek Blanco Fl. Filip. (1837) 733; ed. 2 (1845) 506; ed. 3, 3 (1879) 135, non Linn.=**ALBIZZIA RETUSA** Benth. (*A. littoralis* T. & B.).

A species of wide distribution in the Philippines along the seashore, but nowhere abundant.

Illustrative specimen from Taytay, Palawan, May, 1912 (*Merrill: Species Blancoanae No. 301*).

ACACIA Willdenow

Mimosa farnesiana Linn.; Blanco Fl. Filip. (1837) 729; ed. 2 (1845) 504; ed. 3, 3 (1879) 133=**ACACIA FARNESIANA** (Linn.) Willd.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the settled areas of the Philippines at low altitudes, especially in those provinces having a long dry season. It is universally known in the Philippines

as *aroma*, a name of Spanish origin and one introduced with the plant from Mexico. The species was certainly purposely introduced into the Philippines for its fragrant flowers.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 648*).

Mimosa tenuifolia Blanco Fl. Filip. (1837) 739; ed. 2 (1845) 510; ed. 3, 3 (1879) 141, *t. 374*, non Linn.=**ACACIA PENNATA** (Linn.) Willd.

This species is commonly known in Rizal Province as *sibog*, and the somewhat acid fruits are still sold in the markets of Pasig, Taytay, etc.

Illustrative specimens from Antipolo, Rizal Province, Luzon, January, March, 1914 (*Merrill: Species Blancoanae No. 259*, fruit, *No. 887*, flower).

SCHRANKIA Willdenow

Mimosa quadrivalvis Linn.; Blanco Fl. Filip. (1837) 732; ed. 2 (1845) 506; ed. 3, 3 (1879) 135=**SCHRANKIA QUADRIVALVIS** (Linn.) Merr. in Philip. Journ. Sci. 5 (1910) Bot. 30 (*Schrankia aculeata* Willd.).

Blanco seems to have interpreted the Linnean species correctly. His specimens were from Bauang, Batangas Province, Luzon. The plant was there known as *sapinit*, a name rather indiscriminately applied to spiny plants such as *Rubus*, *Mezoneurum*, *Caesalpinia*, etc. The species was introduced into the Philippines from Mexico, through the medium of the old Acapulco-Manila galleons. It has in recent times been collected but twice in the Philippines, a single specimen from Cagayan, Misamis Province, Mindanao, and the material distributed herewith secured in Bauang, the place of origin of Blanco's specimens; it is still known in Bauang as *sapinit*. This is a very excellent illustration of the persistence of an introduced species, as Blanco's original observation of the plant in Bauang antedates the year 1837.

Illustrative specimen from Bauang, Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 825*).

MIMOSA Linnaeus

Mimosa asperata Blanco Fl. Filip. (1837) 732; ed. 2 (1845) 505; ed. 3, 3 (1879) 134, *t. 253*, non Linn.=**MIMOSA PUDICA** Linn.

This species is widely distributed in the Philippines at low and medium altitudes in the open country of the settled areas. It was purposely introduced on account of its sensitive leaves at about the time, or shortly before, Blanco wrote the first edition of

the Flora de Filipinas, as he states: "Planta comun en las huertas de Manila, y que ignoro si es indigena, o si ha sido trahida de China, segun dicen." It is now very abundant and thoroughly naturalized. Its common Tagalog name *macahia* simply means "ashamed" and was probably transferred to this plant from the less common and less sensitive *Biophytum sensitivum* DC.

Illustrative specimen from Los Baños, Laguna Province, Luzon, June, 1913 *comm. E. Quisumbing* (*Species Blancoanae No. 36*).

ADENANTHERA Linnaeus

Mimosa virgata Blanco Fl. Filip. (1837) 737, non Linn.=**Mimosa punctata** (?) Blanco op. cit. ed. 2 (1845) 508; ed. 3, 3 (1879) 139, non Linn.=**ADENANTHERA INTERMEDIA** Merr. in Philip. Journ. Sci. 3 (1908) Bot. 228.

Blanco's species was reduced by Fernandez-Villar to *Adenanthera pavonina* Linn., a species that occurs in the Philippines only as a rarely cultivated one. It is very similar and closely allied to the Linnean species, differing in its seeds being half jet black and half bright red. In vegetative and floral characters it is very similar to *Adenanthera pavonina* Linn., but in seed characters is like *Adenanthera bicolor* Moon and is an apparent intermediate between these two species.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 169*).

ENTADA Adanson

Adenanthera gogo Blanco Fl. Filip. (1837) 353 (sp. nov.)=**Entada pursaetha** DC.; Blanco op. cit. ed. 2 (1845) 247; ed. 3, 2 (1878) 96=**ENTADA PHASEOLOIDES** (Linn.) Merr. in Philip. Journ. Sci. 9 (1914) Bot. 86 (*Entada scandens* DC.).

This species is widely distributed in the Philippines at low and medium altitudes and is universally known in the Archipelago as *gogo*. The crushed stems are extensively utilized by the natives as a substitute for soap, its special use being for washing the hair. The synonymy of the species is rather complicated, but *Entada phaseoloides* is the oldest valid name under the Vienna and Brussels codes. See Merrill l. c.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 740*).

PARKIA R. Brown

Mimosa peregrina Blanco Fl. Filip. (1837) 737; ed. 2 (1845) 509; ed. 3, 3 (1879) 139, non Linn.=**PARKIA JAVANICA** (Lam.) Merr. (*Parkia roxburghii* Don).

Acacia niopo Llanos in Mem. Acad. Cienc. Madrid 4 (1858) 508, non HBK=**PARKIA JAVANICA** (Lam.) Merr.

This species is common and widely distributed in Luzon at low altitudes and is universally known as *cupang*. The synonymy is adjusted below:

PARKIA JAVANICA (Lam.) comb. nov.
Gleditsia javanica Lam. Encycl. 2 (1788) 466.
Acacia ? javanica DC. Prodr. 2 (1825) 471.
Mimosa biglobosa Roxb. Fl. Ind. ed. 2, 2 (1832) 551, non Jacq.
Inga timoriana DC. Prodr. 2 (1825) 442.
Parkia roxburghii G. Don Gen. Syst. 2 (1832) 397.
Acacia niopo Llanos Men. Acad. Cienc. Madr. 4 (1858) 508, non HBK.
Mimosa peregrina Blanco Fl. Filip. (1837) 737, non Linn.
Parkia biglobosa Benth. in Hook. Journ. Bot. 4 (1842) 328, p.p.

Gleditsia javanica Lam. seems to have been entirely overlooked by modern botanists, but the form Lamarck described is clearly the species commonly known as *Parkia roxburghii* G. Don, which is widely distributed in the Malayan region and the Philippines. There is no evidence in Lamarck's original description that he had specimens; he based the species on pre-Linnean references in Commelin, Ray, and Plukenet. The local name *cadawang*, cited by him, leaves no doubt as to the form intended, as this is one of the names in common use in Java for the species as here interpreted. The species is typified by Commelin's figure and description, Rar. Pl. Hort. Med. Amstel. 2 (1697) 207, *t. 106*. The figure is poor, and presents only a leafy branch and seeds; it is incorrectly drawn as to the number of pinnae.

Illustrative specimens from Antipolo, Rizal Province, Luzon, January, 1914, fruit (*Merrill: Species Blancoanae No. 604*); Eulacan Province, Luzon, December, 1914, flower (*Merrill: Species Blancoanae No. 689*).

CAESALPINOIDEAE

CYNOMETRA Linnaeus

Schotia speciosa Blanco Fl. Filip. (1837) 356; ed. 2 (1845) 251; ed. 3, 2 (1878) 100, non Jacq.=**CYNOMETRA INAEQUIFOLIA** A. Gray.

Blanco's species was reduced by Fernandez-Villar to *Cynometra ramiflora* Linn. var. *mimosoides* Baker, a form which occurs in the Philippines, but so far as known only in the southern part of the Archipelago, Panay and Mindanao. Blanco's specimens were from Batangas Province, Luzon. *Cynometra inaequifolia* A. Gray, based on specimens from Laguna Province, Luzon, is closely allied to *C. bijuga* Spanoghe; see Merrill in Philip. Journ. Sci. 5 (1910) Bot. 36.

Illustrative specimens from Rizal Province, Luzon, March, June, 1915, there known as *dila-dila* (*dila*=tongue) (*Merrill: Species Blancoanae Nos. 853, 974*).

Crudia spicata Blanco Fl. Filip. ed. 2 (1845) 261 (*Crudya*); ed. 3, 2 (1878) 121, non Willd.=, *pro parte*, **CYNOMETRA SIMPLICIFOLIA** Harms.

Blanco's description for the most part applies to *Crudia blancoi* Rolfe, to which the name *C. spicata* Blanco properly belongs as a synonym. The description in part, however, is manifestly *Cynometra simplicifolia* Harms. The same native name, *malatumbaga*, is applied to both.

Illustrative specimen from Looc, Batangas Province, Luzon, April 24, 1915 (*Merrill: Species Blancoanae No. 924*).

CRUDIA Schreber

Crudia spicata Blanco Fl. Filip. ed. 2 (1845) 261 (*Crudya*); ed. 3, 2 (1878) 121, *t. 244*, non Willd.=**CRUDIA BLANCOI** Rolfe in Journ. Linn. Soc. Bot. 21 (1884) 309 [*Apalatoa blancoi* Merr. in Govt. Lab. Publ. (Philip.) 35 (1906) 19].

Fernandez-Villar considered that Blanco correctly interpreted Willdenow's species, but this is certainly not the case. In my present interpretation I have followed Rolfe, yet it is very manifest that Blanco's description is in part based on *Cynometra simplicifolia* Harms, and not on *Crudia blancoi* Rolfe as currently accepted. I suspect that the description of the leaves and fruits is from the *Crudia*, but that of the inflorescence and the flowers is certainly from the *Cynometra*. The length of the spikes is given as two lines; of the flowers a half line, and the cited period of flowering, November, is of *Cynometra simplicifolia* Harms, not of *Crudia blancoi* Rolfe. Blanco's specimens were, in part, from Mandaloyon and Parañaque, points near Manila; *Cynometra simplicifolia* Harms is still found near the City of Manila, but *Crudia blancoi* not nearer than Antipolo so far as our explorations show. The Tagalog name *malatumbaga* cited by Blanco is still in use for both species, but chiefly for *Crudia*.

Illustrative specimen from Rizal Province, Luzon (*Merrill: Species Blancoanae No. 882*).

TAMARINDUS Linnaeus

TAMARINDUS INDICA Linn.; Blanco Fl. Filip. (1837) 29; ed. 2 (1845) 20; ed. 3, 1 (1877) 39, *t. 14*.

The Linnean species was correctly interpreted by Blanco. It is common in the settled areas at low altitudes in the Philippines. usually, perhaps always, planted. Of prehistoric introduction in the Philippines.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 573*).

INTSIA Thouars

Eperua decandra Blanco Fl. Filip. (1837) 368 (sp. nov.); ed. 2 (1845) 259; ed. 3, 2 (1878) 118=**INTSIA BIJUGA** O. Ktze. (*Afzelia bijuga* A. Gray).

This is one of the most important timber trees in the Philippines, for the most part found along the seashore, extending inland and to considerable altitudes in Palawan. It is universally known in the Philippines as *ipil.*

Illustrative specimen from Malampaya Bay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 376*).

PAHUDIA Miquel

Eperua falcata Blanco Fl. Filip. (1837) 369, non Aubl.=**Eperua rhomboidea** Blanco op. cit. ed. 2 (1845) 260 (sp. nov.); ed. 3, 2 (1878) 119, *t. 281*=**PAHUDIA RHOMBOIDEA** (Blanco) Prain in Sci. Mem. Med. Off. Ind. Army 12 (1901) 14 (*Afzelia rhomboidea* Vid.).

This species is widely distributed in the Philippines at low and medium altitudes and is one of the valuable timber trees of the Archipelago. Its commercial name is *tindalo,* and it is also widely known as *balayon.* It was retained by Fernandez-Villar as a distinct species, but under the genus *Afzelia,* but seems better placed under *Pahudia.*

Illustrative specimen from Los Baños, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 862*).

BAUHINIA Linnaeus

Bauhinia scandens Blanco Fl. Filip. (1837) 332; ed. 2 (1845) 232; ed. 3, 2 (1878) 68, *t. 76,* non Linn.=**BAUHINIA CUMINGIANA** (Benth.) F.-Vill.

The species is of wide distribution in the Philippines, and in the Tagalog Provinces is commonly known as *banot,* the native name given by Blanco. Fernandez-Villar erroneously reduced Blanco's species to *Bauhinia vahlii* W. & A., a species that does not extend to the Philippines. The very strong bast fiber is used by the Negritos for making bow strings.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 557*).

Bauhinia grandiflora Blanco Fl. Filip. (1837) 332; ed 2 (1845) 231; ed. 3, 2 (1878) 67, non Juss., nec Dietr.=**BAUHINIA DOLICHOCALYX** Merr. in Philip. Journ. Sci. 3 (1908) Bot. 231, 5 (1910) Bot. 44.

This very characteristic species is known only from Batangas Province, Luzon, and the illustrative material distributed herewith is practically a topotype of both *Bauhinia dolichocalyx* Merr. and *B. grandiflora* Blanco. The former species was described independently without the realization that Blanco's

Bauhinia grandiflora was identical; but Blanco's specific name is invalid in the genus. *Bauhinia grandiflora* Blanco was reduced by Fernandez-Villar to *B. variegata* Linn., a species that does not occur in the Philippines, and I have previously, Philip. Journ. Sci. 5 (1910) Bot. 44, considered it as possibly the same as *B. acuminata* Linn. Blanco's description, however, applies unmistakably to *B. dolichocalyx* Merr. "Hojas * * * acorazonadas puntiagudas * * *. Flores * * * blancas, de mas de medio palmo de largo * * *. El caliz es de color de canela * * *. Estambres diez * * *. Flor. en Ag."

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 531*).

Bauhinia tomentosa Blanco Fl. Filip. (1837) 330; ed. 2 (1845) 230; ed. 3, 2 (1878) 65, *t. 118* (as *Pileostigma acidum* Benth.), non Linn.= **BAUHINIA MALABARICA Roxb.**

This species is very abundant on dry hills in parts of Rizal and Laguna Provinces, Luzon. The fresh leaves are distinctly acid to the taste.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 622*).

Bauhinia castrata Blanco Fl. Filip. (1837) 331 (sp. nov.) = **BAUHINIA PURPUREA** Linn.; Blanco op. cit. ed. 2 (1845) 231; ed. 3, 2 (1878) 66.

Blanco described *Bauhinia castrata* from a specimen observed in cultivation in a garden at Pasig, Rizal Province, Luzon. He later reduced it to *Bauhinia purpurea* Linn., which Fernandez-Villar considered to be the correct disposition of it. As *Bauhinia purpurea* Linn. after long search, was not to be found in the Philippines, cultivated or otherwise, I considered this disposition of Blanco's species to be erroneous. I am now of the opinion, however, that the reduction to *Bauhinia purpurea* Linn. was correct, as Blanco's description conforms closely to the characters of the Linnean species, which is, moreover, widely cultivated as an ornamental plant; it has been re-introduced into the Philippines in recent times.

Illustrative specimen from cultivated trees, Manila, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1050*).

BAUHINIA BINATA Blanco Fl. Filip. (1837) 331 (*binnata*) (sp. nov.); ed. 2 (1845) 231; ed. 3, 2 (1878) 66.

Synonyms of this are *Bauhinia pinnata* Walp. in Linnaea 16 (1842) Litt.-Ber. 53, *Phanera blancoi* Benth., and *Bauhinia blancoi* Baker. I have seen no specimens of the Siam plant that Baker referred to *Bauhinia blancoi;* the Philippine plant,

however, is a very characteristic one, always found along the seashore, its flowers having ten stamens, conforming very closely with Baker's description. As to the specific name Blanco manifestly intended *binata*, not *pinnata* as interpreted by Walpers, from the phrase immediately following the name: "Bauhinia de hojas hermanadas." Blanco's specific name, corrected from *binnata* to *binata*, is accordingly retained.

Illustrative specimen from Pagbilao, Tayabas Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 998*).

CASSIA Linnaeus

CASSIA OCCIDENTALIS Linn.; Blanco Fl. Filip. (1837) 338; ed. 2 (1845) 236; ed. 3, 2 (1878) 75, *t. 73*.

The Linnean species was correctly interpreted by Blanco. A common and widely distributed weed in the settled areas at low altitudes in most parts of the Philippines.

Illustrative specimen from Baliuag, Bulacan Province, Luzon, December, 1915 (*Merrill: Species Blancoanae No. 939*).

CASSIA TORA Linn.; Blanco Fl. Filip. (1837) 337; ed. 2 (1845) 235; ed. 3, 2 (1878) 74, *t. 122*.

The Linnean species was correctly interpreted by Blanco. A very common weed in and about towns throughout the Philippines at low altitudes; introduced from tropical America.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 300*).

Cassia longisiliqua Blanco Fl. Filip. (1837) 338, non Linn. f.=**Cassia sulcata** Blanco op. cit. ed. 2 (1845) 236; ed. 3, 2 (1878) 76, non DC.=**CASSIA HIRSUTA** Linn.

An introduced weed in the Philippines, scattered in the settled areas at low altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 449*).

Cassia arayatensis Llanos Fragm. (1851) 71 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 55=**CASSIA TIMORIENSIS** DC.

Cassia montana Naves in Blanco Fl. Filip. ed. 3, *t. 452*, non Heyne=**CASSIA TIMORIENSIS** DC.

This species is widely distributed in Luzon; our form seems to be identical with that which Miquel described as *Cassia xanthocoma* Miq. Analecta 1 (1850) 10.

Illustrative specimens from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 846*); Arayat, Pampanga Province, Luzon (*Merrill: Species Blancoanae No. 716*).

CASSIA ALATA Linn.; Blanco Fl. Filip. (1837) 339; ed. 2 (1845) 237; ed. 3, 2 (1878) 77, *t. 124 bis.*

The Linnean species was corectly interpreted by Blanco. It is widely distributed in the settled areas of the Philippines but is manifestly an introduced species in the Archipelago. It has a number of native names, but these have apparently been transferred to it from other plants. In some parts of the Archipelago it is known as *acapulco* or *capurco*, fairly definite evidence that the species, so far as the Philippines are concerned, originated in Mexico, and was introduced from Acapulco through the medium of the old Acapulco-Manila galleons, its common name in use here derived from its place of origin. It was undoubtedly introduced for medicinal purposes and is commonly utilized as a remedy for different forms of itch.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 114*).

CASSIA MIMOSOIDES Linn.; Blanco Fl. Filip. (1837) 340; ed. 2 (1845) 237; ed. 3, 2 (1878) 78.

The Linnean species was correctly interpreted by Blanco. Widely distributed in the Philippines, but of local occurrence.

Illustrative specimen from Rizal Province, Luzon, December, 1915 (*Merrill: Species Blancoanae No. 949*).

Cassia fistula Blanco (pro parte) Fl. Filip. (1837) 339; ed. 2 (1845) 237; ed. 3, 2 (1878) 76, non Linn.=**CASSIA JAVANICA** Linn.

Blanco included in his description the true *Cassia fistula* Linn. (leaves, fruits, and medicinal properties), but his description of the flowers as "mui hermosas, blancas y encarnadas" applies to *Cassia javanica* Linn. *C. fistula* has yellow flowers, while *C. javanica* has pink and white flowers; both are known in the Philippines as *cañafistula*. The Philippine form currently referred to *Cassia javanica* may prove to represent a distinct species.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 49*).

CASSIA FISTULA Linn.; Blanco Fl. Filip. (1837) 339; ed. 2 (1845) 237; ed. 3, 2 (1878) 76, *t. 120.*

The Linnean species was, in part, correctly interpreted by Blanco, his description of the leaves, fruits, and uses applying. Blanco's description of the flowers, however, "flores * * * mui hermosas, blancas y encarnadas" applies unmistakably to *Cassia javanica* Linn., as the flowers of *Cassia fistula* are yellow. Widely distributed in the Philippines, usually cultivated, never abundant, and certainly a purposely introduced plant.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 619*).

PTEROLOBIUM R. Brown

Mimosa membranulacea Blanco Fl. Filip. (1837) 739 (sp. nov.) = **Reichardia pentapetala** Blanco op. cit. ed. 2 (1845) 233 (nom. nov.); ed. 3, 2 (1878) 71 = **PTEROLOBIUM MEMBRANULACEUM** (Blanco) Merr.

The species was reduced by Fernandez-Villar to the Indian *Pterolobium indicum* A. Rich., but is apparently specifically distinct. It is to be noted that Blanco describes the flowers as having five stamens which is not true of *Pterolobium;* there is, however, no doubt but that Blanco's statement was due to an error in observation, and equally no doubt but that his species is a *Pterolobium* and the form as here interpreted.

Illustrative specimens from Angat, Bulacan Province, Luzon, September, December, 1913 (*Merrill: Species Blancoanae No. 454*, flowers, *No. 664, fruits*).

CAESALPINIA Linnaeus

Poinciana pulcherrima Linn.; Blanco Fl. Filip. (1837) 333; ed. 2 (1845) 232; ed. 3, 2 (1878) 69, *t. 112* = **CAESALPINIA PULCHERRIMA** (Linn.) Sw.

This species, originating in tropical America, was introduced into the Philippines at an early date by the Spaniards and is now common and widely distributed in the Archipelago, where it is cultivated for ornamental purposes; it is also naturalized. It is universally known in the Philippines as *caballero,* i. e., gentleman. The name originally was *espuela de caballero, espuela* meaning a spur, the name either transferred from the Spanish common name of larkspur, or derived from the spiny character of *Caesalpinia pulcherrima.*

Illustrative specimen from Pasay, Rizal Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 27*).

CAESALPINIA SAPPAN Linn.; Blanco Fl. Filip. (1837) 335; ed. 2 (1845) 234; ed. 3, 2 (1878) 72, *t. 121.*

The Linnean species was correctly interpreted by Blanco. It is widely distributed in the settled areas of the Philippines at low altitudes and is certainly a purposely introduced species in the Archipelago. Its common names are *sappan* and *sibucao.*

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 540*).

Guilandina bonducella Linn.; Blanco Fl. Filip. (1837) 343; ed. 2 (1845) 239 (*bunducela*); ed. 3, 2 (1878) 81 = **CAESALPINIA CRISTA** Linn. (*C. bonducella* Flem.).

The Linnean species was correctly interpreted by Blanco, but

Guilandina bonducella Linn. is manifestly identical with *Caesalpinia crista* Linn., the latter name being the older; see Urban Symb. Antill. 2 (1900) 269–271; Merr. in Philip. Journ. Sci. 5 (1910) Bot. 53. The species is found throughout the Philippines along the seashore, its most generally used native name (Tagalog) being *calambibít*.

Illustrative specimen from Pasay, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 398*).

Guilandina nuga Linn.; Blanco Fl. Filip. (1837) 344; ed. 2 (1845) 240; ed. 3, 2 (1878) 81, *t. 150*=**CAESALPINIA NUGA** (Linn.) Ait.

This species is found along tidal streams, muddy shores, etc., throughout the Philippines, within the influence of salt or brackish water. It is to be noted that the specimen in Hermann's herbarium cited by Linnaeus under *C. crista*, is *C. nuga* and not *C. crista* as the latter is usually interpreted; see Trimen Fl. Ceyl. 2: 99.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 649*).

MEZONEURUM Desfontaines

Caesalpinia torquata Blanco Fl. Filip. (1837) 336 (sp. nov.)=**Mezoneurum procumbens** Blanco op. cit. ed. 2 (1845) 235 (nom. nov.); ed 3, 2 (1878) 73=**MEZONEURUM LATISILIQUUM** (Cav. 1799) Merr. in Philip. Journ. Sci. 5 (1910) Bot. 57 (*Mezoneurum glabrum* Desf.).

Blanco's species was correctly reduced by Fernandez-Villar to Desfontaine's species, but *Bauhinia ? latisiliqua* Cav. supplies an older specific name. Cavanilles's species was a mixture, as he figured and described the leaves of *Bauhinia* and the fruits of the present species; the specific name having been taken from the fruits, I have interpreted the species as *Mezoneurum*, rather than as a *Bauhinia*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 875*).

Caesalpinia ignota Blanco Fl. Filip. (1837) 336 (sp. nov.); ed. 2 (1845) 235; ed. 3, 2 (1878) 72=**MEZONEURUM PUBESCENS** Desf.

The species is common on the dry grass-covered hills about Manila and is of local occurrence in Luzon in those regions where there is a protracted dry season. Philippine material has been compared with Desfontaine's type in the Paris Museum by Lecomte; see Philip. Journ. Sci. 5 (1910) Bot. 56.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 294*).

PAPILIONATAE

ORMOSIA Jackson

ORMOSIA CALAVENSIS Azaola ex Blanco Fl. Filip. ed. 2 (1845) 230 (sp. nov.); ed. 3, 2 (1878) 64.

This species is a valid one, and is widely distributed in the Philippines at low and medium altitudes, growing in forested areas. Regarding it, Blanco states: "Arboles * * *, que he visto en Calauan el Sr. D. Iñigo Gonzalez y Azaola, de quien es la descripción dada." The species is very generally known in the Philippines as *bahay*.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 707*).

SOPHORA Linnaeus

SOPHORA TOMENTOSA Linn.; Blanco Fl. Filip. (1837) 328; ed. 2 (1845) 229; ed. 3, 2 (1878) 63.

Sophora heptaphylla Blanco op. cit. 329 (*heptaphilla*); 229; 63, non Linn.= **SOPHORA TOMENTOSA** Linn.

Blanco's descriptions both apply to the same form, i. e., *Sophora tomentosa* Linn., a very characteristic species of wide distribution in the Philippines along the seashore. Blanco merely attempted to interpret the two Linnean species as other authors had done, on account of the later's erroneous citation of one of Rumphius' figures as representing *Sophora heptaphylla* Linn., by Linnaeus himself; but *Sophora heptaphylla* Linn. is no *Sophora* and is *Derris heptaphylla* (Linn.) Merr. Interpret. Herb. Amb. (1917) 273 (*D. sinuata* Thwaites, *D. diadelpha* Merr.); see Trimen. Fl. Ceyl. 2 (1894) 94.

Illustrative specimen from Gumaca, Tayabas Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1001*).

CROTALARIA Linnaeus

Phaseolus bulai Blanco Fl. Filip. (1837) 572 (sp. nov.)=**Quirosia anceps** Blanco op. cit. ed. 2 (1845) 398 (gen. et sp. nov.); ed. 3, 2 (1879) 367=**CROTALARIA VERRUCOSA** Linn.

Blanco's species was correctly reduced by Fernandez-Villar. The species is widely distributed in the settled areas of the Philippines at low altitudes, but is more commonly met with near the sea.

Illustrative specimen from Lamao, Bataan Province, Luzon, December, 1915 (*Merrill: Species Blancoanae No. 937*).

CROTALARIA QUINQUEFOLIA Linn.; Blanco Fl. Filip. (1837) 569; ed. 2 (1845) 397; ed. 3, 2 (1879) 365, *t. 159*.

The Linnean species was correctly interpreted by Blanco. It

is widely distributed in the Philippines at low and medium altitudes as a weed in open wet places, old rice paddies, etc.; it is undoubtedly an introduced plant in the Archipelago.

Illustrative specimen from Manila, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 29*).

CROTALARIA LINIFOLIA Linn. f.; Blanco Fl. Filip. (1837) 570=**Quirosia secunda** Blanco op. cit. ed. 2 (1845) 398 (gen. et sp. nov.); ed. 3, 2 (1879) 366, *t. 268*.

Crotalaria pallida Blanco Fl. Filip. (1837) 570, non Ait.=**Crotalaria pumila** (?) Blanco op. cit. ed. 2 (1845) 397; ed. 3, 2 (1879) 365, non Schrank= **CROTALARIA LINIFOLIA** Linn. f. (*C. stenophylla* Vog.).

Blanco was apparently correct in his interpretation of the species described by the younger Linnaeus, although the Philippine plant differs notably from the Indian form in its narrow leaves. Blanco erred in describing the plant as a new genus and species in the second edition of his Flora de Filipinas. If the Philippine form be distinct, the oldest valid name is *Crotalaria stenophylla* Vog. (1843), and a synonym is *Crotalaria formosana* Mats. (1900), figured in Journ. Coll. Sci. Univ. Tokyo **22** (1906) 103, *t. 10*. It is widely distributed in Luzon at low and medium altitudes and occurs also in Mindanao, Formosa, and the Caroline Islands. *Crotalaria pallida* Blanco was reduced by Fernandez-Villar to *C. sessiliflora* Linn., but after a critical study of Blanco's short and very imperfect description, the geographic distribution of the various simple-leaved species of *Crotalaria* in Luzon, and their seasons of flowering, I am convinced that the form Blanco described under this name is merely a dwarfed form of *Crotalaria linifolia* Linn. (*C. stenophylla* Vog.).

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 502*).

INDIGOFERA Linnaeus

Tetragonolobus simplicifolius Blanco Fl. Filip. ed. 2 (1845) 397 (sp. nov.); ed. 3, 2 (1879) 364=**INDIGOFERA UNIFOLIOLATA** Merr. in Philip. Journ. Sci. **5** (1910) Bot. 65.

This species was reduced by Fernandez-Villar to the Indian *Alysicarpus tetragonolobus* Edgw., a species that does not occur in the Philippines and one to which Blanco's description does not at all apply. The species is unquestionably identical with *Indigofera unifoliolata* Merr., as Blanco's description applies perfectly, while the distribution of the plant in Luzon is in conformity with the habitat of *Tetragonolobus simplicifolius* Blanco,

which was from near sea level at Parañaque, Rizal Province, Luzon. Blanco's specific name is invalidated in *Indigofera* by *I. simplicifolia* Lam.

Illustrative specimen from Pantay, Rizal Province, Luzon, September, 1915 (*Merrill: Species Blancoanae No. 965*).

Indigofera angustifolia Blanco Fl. Filip. (1837) 596; ed. 2 (1845) 415; ed. 3, 2 (1879) 394, non Linn.=**INDIGOFERA HIRSUTA** Linn.

Indigofera tinctoria Naves in Blanco Fl. Filip. ed. 3, (1877–83) *t. 163*, non Linn.=**INDIGOFERA HIRSUTA** Linn.

This is common and widely distributed in the settled areas of the Philippines at low altitudes; it is certainly an introduced species in the Archipelago.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 403*).

INDIGOFERA TINCTORIA Linn.; Blanco Fl. Filip. (1837) 591; ed. 2 (1845) 413; ed. 3, 2 (1879) 393.

Blanco's conception of the Linnean species was reduced by Fernandez-Villar to *Indigofera anil* Linn., but the description is unmistakably *I. tinctoria* Linn., as the pods are described by Blanco as two inches in length: "Legum. * * * de dos pulgadas de largo", one of the essential characters by which *Indigofera tinctoria* L. is distinguished from *I. anil* Linn. The species was formerly extensively cultivated in Luzon, but is now found only as an occasional plant in waste places. It is widely distributed in the settled areas at low and medium altitudes but is much less common than *Indigofera suffruticosa* Mill. (*I. anil* Linn.).

Illustrative specimen from Manila, Luzon, March, 1915 (*Merrill: Species Blanconaae No. 826*).

Indigofera argentea Blanco Fl. Filip. ed. 2 (1845) 415 (in nota); ed. 3, 2 (1879) 394 (in nota), non Linn.=**INDIGOFERA SUFFRUTICOSA** Mill. (*I. anil* Linn.).

This species is common and widely distributed in the Philippines, occurring throughout the Archipelago in the settled areas at low altitudes. It is an introduced plant in the Philippines. Blanco's description of *Indigofera tinctoria* Linn. as having fruits "de dos pulgadas de largo" indicates clearly that he was describing the Linnean species in spite of previous reductions of *Indigofera tinctoria* Blanco to *I. anil* Linn. (=*I. suffruticosa* Mill.).

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 124*).

PSORALEA Linnaeus

Liparia badocana Blanco Fl. Filip. (1837) 597 (sp. nov.) = **PSORALEA BADOCANA** Blanco op. cit. ed. 2 (1845) 416 (comb. nov.); ed. 3, 2 (1879) 395.

This endemic species was described by Turczaninow in 1848 as *Meladenia densiflora*, based on Philippine specimens collected by *Cuming*. It is of local occurrence in the drier parts of northern and western Luzon at low and medium altitudes. Blanco's specific name was from the town of Badoc, Ilocos Norte Province, Luzon, where the plant was observed by him.

Illustrative specimen from Bauang, Union Province, Luzon, February, 1916 (*Merrill: Species Blancoanae No. 968*).

PAROSELA Cavanilles

Amorpha glandulosa Blanco Fl. Filip. (1837) 555 (sp. nov.) = **Dalea alopecuroides** Blanco op. cit. ed. 2 (1845) 389; ed. 3, 2 (1879) 351, non Willd. = **PAROSELA GLANDULOSA** (Blanco) Merr. (*Dalea glandulosa* Merr.; *Dalea nigra* Mart. & Gal.).

A native of Mexico, introduced into the Philippines through the medium of the Acapulco-Manila galleons and now very abundant on dry hills about Manila and in some of the more distant provinces in Luzon.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 251*).

TEPHROSIA Persoon

Indigofera hirsuta Blanco Fl. Filip. (1837) 591, non Linn. = **Indigofera senegalensis** Blanco op. cit. ed. 2 (1845) 412; ed. 3, 2 (1879) 392, *t. 162*, non Lam. = **TEPHROSIA DICHOTOMA** Desv. in Ann. Sci. Nat. I 9 (1826) 415 (*T. luzoniensis* Vogel, 1843).

The form described by Blanco was reduced by Fernandez-Villar to *Tephrosia purpurea* Pers., to which *T. dichotoma* Desv. and *T. luzoniensis* Vog. may be reduced if Persoon's species be interpreted in a broad sense. It is widely distributed in the settled areas of the Philippines, occurring in and about towns in waste places, etc.

Illustrative specimen from Guadalupe, Rizal Province, August, 1914 (*Merrill: Species Blancoanae No. 499*).

GLIRICIDIA Humbolt, Bonpland, & Kunth

Galedupa pungam Blanco Fl. Filip. (1837) 558; ed. 2 (1845) 390; ed. 3, 2 (1879) 352, *t. 250*, non Gmel. = **GLIRICIDIA SEPIUM** (Jacq.) Steud. (*G. maculata* HBK.).

This species is common and widely distributed in the Philip-

pines in the settled areas at low altitudes. It is extensively planted in hedge rows, etc., and is also thoroughly naturalized. Introduced from Mexico at an early date. *Millettia luzonensis* A. Gray is a synonym.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *madre cacao* and *cacauate*, the former of Spanish, the latter of Mexican origin (*Merrill: Species Blancoanae No. 613*).

SESBANIA Scopoli

Coronilla emerus Blanco Fl. Filip. (1837) 582, non Linn.=**Sesbania cannabina** (?) Blanco op. cit. ed. 2 (1845) 418; ed. 3, 2 (1879) 400, non Poir.=**SESBANIA ROXBURGHII** Merr. in Philip. Journ. Sci. 4 (1909) Bot. 269, 5 (1910) Bot. 74.

This was correctly reduced by Fernandez-Villar to *Sesbania aculeata* Poir. var. *paludosa* (Roxb.) Baker=*Sesbania paludosa* Prain, non Jacq. (*Aeschynomene paludosa* Roxb.), but Roxburgh's specific name is invalid under *Sesbania*. The species is known in the Philippines only from the region of Lake Bay, Luzon, where it grows in shallow water.

Illustrative specimen from Siniloan, Laguna Province, Luzon, January, 1915, there known as *balacbac*, a name in common use for the suffrutescent species of *Sesbania* (*Merrill: Species Blancoanae No. 880*).

SESBANIA GRANDIFLORA Pers.; Blanco Fl. Filip. (1837) 599; ed. 2 (1845) 418; ed. 3, 2 (1879) 399, *t. 291*.

Persoon's species was correctly interpreted by Blanco. It is common and widely distributed in the Philippines at low altitudes, usually planted, sometimes spontaneous. It is certainly of prehistoric introduction in the Philippines.

Illustrative specimen from Manila, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 599*).

AESCHYNOMENE Linnaeus

Aeschynomene roxburghii Spreng.; Llanos Frag. Pl. Philip. (1851) 83; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 64=**AESCHYNOMENE INDICA** Linn.

Sprengel's species was correctly interpreted by Llanos, but the Linnean name is the proper one for it. It is widely distributed in the settled areas of the Philippines, growing at low and medium altitudes in open wet places.

Illustrative specimen from Arayat, Pampanga Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 762*).

ARACHIS Linnaeus

ARACHIS HYPOGAEA Linn.; Blanco Fl. Filip. (1837) 567; ed. 2 (1845) 396; ed. 3, 2 (1879) 363, *t. 157.*

The Linnean species was correctly interpreted by Blanco. It is widely cultivated in the Philippines and is generally known as *maní,* the name introduced by the Spaniards with the plant.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 588*).

ZORNIA Gmelin

Lupinus angustifolius Blanco Fl. Filip. (1837) 566, non Linn.=**Smithia bigeminata** Blanco op. cit. ed. 2 (1845) 395 (*rigeminata*) (sp. nov.); ed. 3, 2 (1879) 362=**ZORNIA DIPHYLLA** (Linn.) Pers.

This species is abundant locally, growing in open dry places, especially in thin poor soil. It is undoubtedly an introduced plant in the Archipelago. Widely distributed in the settled regions at low altitudes.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 66*).

DESMODIUM Desvaux

Hippocrepis multisiliquosa Blanco Fl. Filip. (1837) 584, non Linn.= **DESMODIUM GANGETICUM** (Linn.) DC.; Blanco op. cit. ed. 2 (1845) 408; ed. 3, 2 (1879) 384.

This species was reduced by Fernandez-Villar to *Desmodium latifolium* DC., but without good cause. The description is very poor, but applies to *Desmodium gangeticum* (Linn.) DC. in all respects except in the statement "peciolos cortos"; this is probably due to the fact that Blanco observed also specimens of the allied *Desmodium virgatum* Zoll., which has short petioles and is rather more common about Manila than is *Desmodium gangeticum* DC.

Illustrative specimens from Masambong, Rizal Province, Luzon, October, 1914, and Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae Nos. 138, 498*).

Hippocrepis multisiliquosa Blanco Fl. Filip. (1837) 584, p. p., non Linn.= **Desmodium gangeticum** Blanco op. cit. ed. 2 (1845) 408; ed. 3, 2 (1879) 384, *t. 377,* p. p., quoad "peciolos cortos"=**DESMODIUM VIRGATUM** Zoll.

Blanco's species was reduced by Fernandez-Villar to *Desmodium latifolium* DC., but I believe that he described, in part at least, true *Desmodium gangeticum* DC. His description of the petioles as short, however, applies to *D. virgatum* Zoll., which is common in certain regions near Manila.

Hippocrepis rhomboidea Blanco Fl. Filip. (1837) 585 (sp. nov.) = **Desmodium spirale** DC.; Blanco op. cit. ed. 2 (1845) 408; ed. 3, 2 (1879) 385 = **DESMODIUM PROCUMBENS** (Mill.) A. S. Hitchc.

This species is locally abundant, but by no means of general distribution in the Philippines, occurring at low altitudes and only in the settled areas; undoubtedly introduced from tropical America.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 360*).

Hippocrepis comosa Blanco Fl. Filip. (1837) 584, non Linn. = **Desmodium diversifolium** Blanco op. cit. ed. 2 (1845) 408; ed. 3, 2 (1879) 384, non DC. = **DESMODIUM LAXIFLORUM** DC.

This species was reduced by Fernandez-Villar to *Desmodium gangeticum* DC., in which, in part, he was perhaps correct. Blanco describes his plant as having sometimes simple leaves, but more often 3-foliolate ones. There is nothing in the description that definitely determines just what form he intended, but as *D. laxiflorum* DC. is common and widely distributed in the Philippines at low altitudes, and as there is nothing in Blanco's description that does not agree with the species, except the statement "hojas unas veces simples," the present identification of Blanco's species is assumed. The form with simple leaves included by Blanco was probably *Desmodium gangeticum* DC.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 175*).

Hippocrepis humilis Blanco Fl. Filip. (1837) 585 (sp. nov.) = **Desmodium parvifolium** Blanco op. cit. ed. 2 (1845) 408; ed. 3, 2 (1879) 386, non DC. = **DESMODIUM TRIFLORUM** (Linn.) DC.

This species is very common and widely distributed in the settled areas of the Philippines at low and medium altitudes, in and about towns, in waste places, etc.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 497*).

Aeschynomene arborea Linn.; Blanco Fl. Filip. ed. 1 (1837) 581 (*Aeschinamene*); ed. 2 (1845) 406; ed. 3, 2 (1879) 381 = **DESMODIUM UMBELLATUM** DC.

The Linnean specific name *arborea* has priority over the specific name *umbellatum*, but the former is apparently invalidated in *Desmodium* by *Desmodium arboreum* Sweet. The species is common along the seashore throughout the Philippines.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 527*).

Cytisus quinquepetalus Blanco Fl. Filip. (1837) 598 (sp. nov.) = **Cajanus quinquepetalus** Blanco op. cit. ed. 2 (1845) 417 (nom. nov.); ed. 3, 2 (1879) 397 = **DESMODIUM QUINQUEPETALUM** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) **35** (1906) 20 (*D. cephalotes* F.-Vill., non Wall.).

This endemic species is of rather wide distribution in Luzon, especially in those provinces having a protracted dry season. *Glycine cajanoides* Walp. is a synonym.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 571*).

Hedysarum pulchellum Linn.; Blanco Fl. Filip. (1837) 581 = **Dicerma pulchellum** DC.; Blanco op. cit. ed. 2 (1845) 407; ed. 3, 2 (1879) 383 = **DESMODIUM PULCHELLUM** (Linn.) Benth.

This species is common and widely distributed in the Philippines in the settled areas; certainly introduced and of prehistoric introduction. Blanco's discussion, following the description of the species, applies to *Flemingia strobilifera* R. Br., not to *Desmodium pulchellum* Benth.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 609*).

LOUREA Necker

Hedysarum vespertilionis Linn.; Blanco Fl. Filip. (1837) 581; ed. 2 (1845) 407; ed. 3, 2 (1879) 382, *t. 201* = **LOUREA VESPERTILIONIS** (Linn.) Desv.

The Linnean species was correctly interpreted by Blanco. He gives a very brief description, stating that he had seen only a single, old specimen in cultivation in Manila. The species has no claim for consideration as a Philippine one, although, very rarely, it is still to be found in cultivation in Manila gardens.

DALBERGIA Linnaeus f.

Amerimnon mimosella Blanco Fl. Filip. (1837) 563 (sp. nov.); ed. 2 (1845) 393; ed. 3, 2 (1879) 358 = **DALBERGIA MIMOSELLA** Prain (*D. minahassae* Koord.).

Fernandez-Villar reduced Blanco's species to *Dalbergia lanceolaria* Linn. f., a species that does not extend to the Philippines, and one to which Blanco's description does not conform. Blanco's specimens were from Tala, Bulacan Province, Luzon, a locality a few miles north of Manila. His discription applies very closely to *Dalbergia minahassae* Koord., a species of wide distribution in the Philippines, except in one particular. The leaves (leaflets) are described as "ovales o lineares;" in Blanco's species as I interpret it, the leaflets are somewhat oval, but never linear. The identity of *Amerimnon mimosella* Blanco

has partly been determined by exclusion. The region from which Blanco received his material is thoroughly well known botanically; and *Dalbergia minahassae* Koord., which still grows in the same general region, is the only species in the entire area, and for that matter is the only species of *Dalbergia* known from the Philippines, that conforms at all with Blanco's description.

PTEROCARPUS Linnaeus

Pterocarpus pallidus Blanco Fl. Filip. (1837) 560 (sp. nov.); ed. 2 (1845) 391; ed. 3, 2 (1879) 355, *t. 205*=**PTEROCARPUS INDICUS** Willd.

This species is very widely distributed in the Philippines; it is one of the most valuable timber trees in the Archipelago.

Illustrative specimen from Taytay, Palawan, May 1913 (*Merrill: Species Blancoanae No. 575*).

Pterocarpus santalinus Blanco Fl. Filip. (1837) 561; ed. 2 (1845) 392; ed. 3, 2 (1879) 356, non Linn. f.=**PTEROCARPUS BLANCOI** Merr.

Pterocarpus santalinus Blanco, as I have interpreted it, is a form very closely allied to *Pterocarpus indicus* Willd., distinguishable only by its larger fruits, which are from 6 to 8 cm in diameter; it possibly should be merged in *Pterocarpus indicus* Willd. and, again, should be critically compared with *Pterocarpus papuanus* F.-Muell. Fernandez-Villar considered that Blanco correctly interpreted *Pterocarpus santalinus* Linn. f., but Blanco's description does not conform to the characters of this species, which, moreover, does not extend to the Philippines.

Illustrative specimen from Bauang, Union Province, Luzon, November, 1916 (*Merrill: Species Blancoanae No. 995*).

PONGAMIA Ventenant

Galedupa maculata Blanco Fl. Filip. (1837) 559 (sp. nov.); ed. 2 (1845) 390; ed. 3, 2 (1879) 353, *t. 417*=**PONGAMIA PINNATA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 271 (*P. glabra* Vent.).

This species is common and widely distributed along the seashore throughout the Philippines and was correctly reduced by Fernandez-Villar to *Pongamia glabra* Vent., which is a synonym of *Pongamia pinnata* (Linn.) Merr.

Illustrative specimen from Looc, Batangas Province, Luzon, April, 1915 (*Merrill: Species Blancoanae No. 958*).

DERRIS Loureiro

Pterocarpus frutescens Blanco Fl. Filip. (1837) 562 (sp. nov.); ed. 2 (1845) 392; ed. 3, 2 (1879) 356, non Vell.=**DERRIS TRIFOLIATA** Lour. (*Derris uliginosa* Benth.).

Pterocarpus diadelphus Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 161*, non Blanco=**DERRIS TRIFOLIATA** Lour.

This species is found throughout the Philippines near the

seashore, commonly growing in thickets along muddy shores and tidal streams.

Illustrative specimen from Obando, Bulacan Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 541*).

Pterocarpus diadelphus Blanco Fl. Filip. (1837) 563 (sp. nov.); ed. 2 (1845) 393; ed. 3, 2 (1879) 357=**DERRIS HEPTAPHYLLA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 273 [*Sophora heptaphylla* Linn., *Derris diadelpha* Merr., *Pongamia sinuata* Wall., *Derris sinuata* Thwaites, *Derris floribunda* Naves in Blanco Fl. Filip. ed. 3, *pl. 336*, non Benth., *Derris thyrsiflora* F.-Vill. Novis. App. (1880) 68, non Benth.].

This species is widely distributed in the Philippines at low altitudes, especially near the sea.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 344*).

Galedupa frutescens Blanco Fl. Filip. (1837) 562 (sp. nov.); ed. 2 (1845) 391; ed. 3, 2 (1879) 354, *t. 232*=**DERRIS SCANDENS** (Roxb.) Benth.

This species is common and widely distributed in the Philippines, presenting considerable variation in the shape and size of its leaflets.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 555*).

Cylista piscatoria Blanco Fl. Filip. (1837) 589 (sp. nov.)=**Galactia ? terminaliflora** Blanco op. cit. ed. 2 (1845) 411 (nom. nov.); ed. 3, 2 (1879) 390=**DERRIS ELLIPTICA** (Roxb.) Benth. in Journ. Linn. Soc. Bot. 4 (1860) Suppl. 111 [*Millettia piscatoria* Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 37].

This species is widely distributed in the Philippines at low and medium altitudes and, with other species of the genus, is used by the natives in stupefying or poisoning fish; the Tagalog and Visayan name *tubli* or *tugli* is applied to several species of *Derris*, but Blanco's description applies unmistakably to the form here indicated. *Cylista piscatoria* Blanco was erroneously referred by Fernandez-Villar to *Millettia splendens* W. & A., a species that does not extend to the Philippines.

Illustrative specimen from Mount Batulao, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 469*).

ABRUS Linnaeus

ABRUS PRECATORIUS Linn.; Blanco Fl. Filip. (1837) 565; ed. 2 (1845) 394; ed. 3, 2 (1879) 361, *t. 156*.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the settled areas of the

Philippines at low and medium altitudes; certainly introduced but of prehistoric introduction.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 506*).

CLITORIA Linnaeus

CLITORIA TERNATEA Linn.; Blanco Fl. Filip. (1837) 590; ed. 2 (1845) 412; ed. 3, 2 (1879) 391, *t. 301*.

The Linnean species was correctly interpreted by Blanco. It is very common and widely distributed in the settled areas at low and medium altitudes and is certainly an introduced plant in the Archipelago.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 394*).

ERYTHRINA Linnaeus

Erythrina carnea Blanco Fl. Filip. (1837) 564; ed. 2 (1845) 393; ed. 3, 2 (1879) 359, *t. 217*, non Dryand.=**ERYTHRINA VARIEGATA** Linn. var. **ORIENTALIS** (Linn.) Merr. Interpret. Herb. Amb. (1917) 276 (*E. indica* Lam.).

This species is very common and widely distributed in the Philippines, especially along the seashore and is universally known as *dap-dap*. It is well to note that *Erythrina indica* Lam. (1788) does not differ specifically from *Erythrina variegata* Linn. (1754), the type of *Erythrina variegata* Linn. being only a form of *E. indica* Lam. with variegated leaves.

Illustrative specimen from Manila, Luzon, March, 1911 (*Merrill: Species Blancoanae No. 620*).

Erythrina picta Blanco Fl. Filip. (1837) 565, non Linn.=**Erythrina caffra** Blanco op. cit. ed. 2 (1845) 394; ed. 3, 2 (1879) 360, *t. 326*, non Thunb.=**ERYTHRINA FUSCA** Lour. (*E. ovalifolia* Roxb.).

This species is widely distributed at low altitudes in the Philippines, in low wet lands, in swampy places, etc.

Illustrative specimen from Manila, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 602*).

MUCUNA Adąnson

Negretia urens Blanco Fl. Filip. (1837) 586; ed. 2 (1845) 409; ed. 3, 2 (1879) 387, non Tussac=**MUCUNA NIGRICANS** (Lour.) Steud.

This was reduced by Fernandez-Villar to *Mucuna monosperma* DC., which is certainly an error as Blanco's description does not apply to de Candolle's species, which, moreover, does not extend to the Philippines. In my previous consideration of Blanco's species, I reduced it to *Mucuna imbricata* DC., but

later, Philip. Journ. Sci. 5 (1910) Bot. 116, reduced *Mucuna imbricata* DC. to the older *M. nigricans* (Lour.) Steud. The species, whatever its correct name, extends from northern Luzon to southern Mindanao at low and medium altitudes.

Illustrative specimen from San Mateo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 779*).

Negretia mitis Blanco Fl. Filip. (1837) 588; ed. 2 (1845) 410; ed. 3, 2 (1879) 388, *t. 405 bis*, non Ruiz & Pav.=**MUCUNA NIVEA** (Roxb.) DC. (*M. lyonii* Merr.).

Blanco's species was reduced by Fernandez-Villar to *Mucuna nivea* DC., but in 1906 I redescribed it as *Mucuna lyonii*, which Piper and Tracy have apparently correctly reduced to *Mucuna nivea* W. & A.; see U. S. Dept. Agr. Bur. Plant Industry Bull. 179 (1910) 15, *t, 4, f. A;* Merr. in Philip. Journ. Sci. 5 (1910) Bot. 117. I prefer, however, to consider de Candolle as the author of the transfer to *Mucuna*. The species has been found in the Philippines only in cultivation.

Illustrative specimen from Manila, Luzon, March, 1915, from cultivated plants (*Merrill: Species Blancoanae No. 863*).

Negretia pruriens Blanco Fl. Filip. ed. 2 (1845) 411 (sp. vel. comb. nov.); 3, 2 (1879) 389, *t. 331*=**MUCUNA PRURIENS** (Linn.) DC.

This species was reduced by Fernandez-Villar to *Mucuna atropurpurea* DC., certainly by error, as de Candolle's species does not extend to the Philippines. I interpret Blanco's statement regarding the pods, "Legum. * * * con surcos transversales," as applying to the distinct transverse depressions between the seeds which are evident in fully matured pods; his description in all other respects applies exactly, while the species is common in the immediate vicinity of Manila and is widely distributed in the Philippines at low and medium altitudes. It is commonly known as *nipai* or *lipai*. The flowers are very dark purple in color. The name *Negretia pruriens* Blanco does not appear in Index Kewensis.

Illustrative specimen from near Fort William McKinley, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 645*).

GALACTIA P. Browne

Dolichos repens Blanco Fl. Filip. (1837) 577; ed. 2 (1845) 402; ed. 3, 2 (1879) 373, non Linn.=**GALACTIA TENUIFLORA** W. & A.

Fernandez-Villar reduced this to *Vigna repens* Baker, a species that does not extend to the Philippines, and moreover one to which Blanco's description does not apply. The description conforms exactly with *Galactia tenuiflora* W. & A., this being now

known from several localities in central Luzon. The plant is probably more common than collections would indicate, for, as Blanco notes, it is decidedly inconspicuous. No other Philippine leguminous plant known to me agrees at all with Blanco's description.

Illustrative specimen from Punta de Azufre, Batangas Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1039*).

PUERARIA de Candolle

Pachyrhizus teres Blanco Fl. Filip. (1837) 580 (sp. nov.)=**Pachyrhizus montanus** Blanco op. cit. ed. 2 (1845) 406; ed. 3, 2 (1879) 381, non DC.=**PUERARIA PHASEOLOIDES** (Roxb.) Benth.

Dioscorea bolojonica Blanco Fl. Filip. (1837) 800 (sp. nov.); ed. 2 (1845) 551; ed. 3, 3 (1879) 208=**PUERARIA PHASEOLOIDES** (Roxb.) Benth.

This species is common and widely distributed in the settled areas of the Philippines at low and medium altitudes, and Blanco's descriptions apply unmistakably to *Pueraria phaseoloides* Benth. Fernandez-Villar reduced here *Dioscorea bolojonica* Blanco which is merely a form of *Pueraria phaseoloides* Benth. with large leaflets. The species is still known in Boljoon, Cebu, as *bajai,* and specimens received under this name agree with typical *Pueraria phaseoloides* Benth.

Illustrative specimen from Pasay, Rizal Province, Luzon, November, 1913 (*Merrill: Species Blancoanae No. 195*).

CANAVALIA de Candolle

Dolichos acinaciformis Blanco Fl. Filip. (1837) 578, non Jacq.=**Canavalia ensiformis** Blanco op. cit. ed. 2 (1845) 404; ed. 3, 2 (1879) 377, non DC.=**CANAVALIA LINEATA** (Thunb.) DC.

Blanco's description is very imperfect, and the reduction is made chiefly from the habitat cited by him. The description applies as well, perhaps better, to *Canavalia microcarpa* (DC.) Merr. (*C. turgida* Grah.). *Canavalia lineata* (Thunb.) DC. grows on the sandy beaches above high tide mark, while *C. microcarpa* Merr. grows in thickets back of the beach.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 97*).

Dolichos ensiformis Blanco Fl. Filip. (1837) 577, non Linn.=**CANAVALIA GLADIATA** Jacq.; Blanco Fl. Filip. ed. 2 (1845) 403; ed. 3, 2 (1879) 376, *t. 449.*

Blanco's description applies unmistakably to Jacquin's species. He infers that it was cultivated and states that the pods were a foot and a half long and two inches wide, the seeds

brownish. The species is occasionally found in cultivation in the Philippines to-day, but is not common.

CAJANUS de Candolle

Cytisus cajan Linn.; Blanco Fl. Filip. (1837) 597=**Cajanus bicolor** DC.; Blanco op. cit. ed. 2 (1845) 416; ed. 3, 2 (1879) 396, *t. 167*=**CAJANUS CAJAN** (Linn.) Millsp. (*C. indicus* Spreng.).

This species is widely distributed in the Philippines in cultivation and semi-naturalized. It is probably of prehistoric introduction, judging from its native names *caguios, callos, gablos, cadios, cardis, tabios,* etc.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 256*).

CANTHAROSPERMUM Wight & Arnott

Cytisus volubilis Blanco Fl. Filip. (1837) 599 (sp. nov.)=**Cajanus volubilis** Blanco op. cit. ed. 2 (1845) 417 (comb. nov.); ed. 3, 2 (1879) 398=**CANTHAROSPERMUM VOLUBILE** (Blanco) Merr. in Philip. Journ. Sci. 5 (1910) Bot. 127.

This species was reduced by Fernandez-Villar to *Atylosia mollis* Benth., but Prain, Journ. As. Soc. Beng. 66[2] (1897) 46 has called attention to the fact that *Atylosia mollis* Benth. is a mixture of two different species and that the name *mollis*, derived from *Collaea mollis* Grah., is applicable to a Himalayan plant. *Atylosia crassa*, the name Prain adopts for the present species, is based on *Dolichos crassus* Grah., a *nomen nudum* that dates from 1831 or 1832. Under our rules, which state that *nomina nuda* have no standing, Blanco's specific name is apparently the oldest valid one for the species, whether considered under *Cantharospermum* or under *Atylosia*. The species is of local occurrence at low and medium altitudes in Luzon, in thickets in the settled areas.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 142*).

FLEMINGIA Roxburgh

FLEMINGIA STROBILIFERA R. Br.; Llanos Frag. Pl. Filip. (1851) 82; F.-Villar & Naves in Blanco Fl. Filip. ed. 3, 4 ' (1880) 63.

This species was correctly interpreted by Llanos. It is common and widely distributed in the Philippines, a characteristic plant of the settled areas at low and medium altitudes. In the discussion following *Hedysarum pulchellum* Linn.; Blanco Fl. Filip. (1837) 581=*Dicerma pulchellum* DC., Blanco op. cit. ed. 2 (1845) 407, ed. 3, 2 (1879) 383=*Desmodium pulchellum*

Benth., Blanco confuses *Flemingia strobilifera* with *Desmodium pulchellum* Benth.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *payang-payang* (*Merrill: Species Blancoanae No. 731*).

Flemingia blancoana Llanos Frag. Pl. Filip. (1851) 80 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 62=**FLEMINGIA LINEATA** (Linn.) Roxb.

I can see no reason for distinguishing the Philippine form described by Llanos as *Flemingia blancoana* from the much older *F. lineata* (Linn.) Roxb. The species is of very local occurrence in the Philippines, being definitely known from but few localities in Luzon. Llanos's specimens were from Calumpit, Bulacan Province, Luzon.

Illustrative specimens from Antipolo, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 552*); Calumpit, Bulacan Province, Luzon (topotype of *F. blancoana*), January, 1915 (*Merrill: Species Blancoanae No. 699*).

PHASEOLUS Linnaeus

Phaseolus inamoenus Blanco Fl. Filip. (1837) 571 (*inamatus*); ed. 2 (1845) 399; ed. 3, 2 (1879) 368, non ? Linn.=**PHASEOLUS LUNATUS** Linn. var.

Phaseolus ilocanus Blanco Fl. Filip. (1837) 572 (sp. nov.)=**Phaseolus tunkinensis** Blanco op. cit. ed. 2 (1845) 399; ed. 3, 2 (1879) 369, *t. 369* non ? Lour.=**PHASEOLUS LUNATUS** Linn. var.

Phaseolus vexillatus Blanco Fl. Filip. (1837) 574, non Linn.=**Phaseolus vulgaris** Blanco op. cit. ed. 2 (1845) 401; ed. 3, 2 (1879) 371, non Linn.=**PHASEOLUS LUNATUS** Linn.

PHASEOLUS LUNATUS Linn.; Blanco op. cit. 573; 400; 370, *t. 352*.

There is apparently no reason for considering any of the above forms characterized by Blanco as specifically distinct from *Phaseolus lunatus* Linn., which, as it occurs in the Philippines, presents considerable variation. It is widely distributed in cultivation and semi-naturalized; certainly introduced. It is usually known as *patani*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, known there as *patani* (*Merrill: Species Blancoanae No. 443*).

Phaseolus mungo Blanco Fl. Filip. (1837) 573; ed. 2 (1845) 400; ed. 3, 2 (1879) 370, non Linn.=**PHASEOLUS AUREUS** Roxb.

In common with very many other authors Blanco misinterpreted the Linnean *Phaseolus mungo*, and considered under that

name the species that Roxburgh described as *P. aureus*. The species is commonly known as *balatong* and *mongos* and is widely cultivated in the Philippines; see Merrill Interpret. Herb. Amb. (1917) 283.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 81*).

VIGNA Savi

Phaseolus caracalla Blanco Fl. Filip. (1837) 575; ed. 2 (1845) 401; ed. 3, 2 (1879) 372, non Linn.=**VIGNA SINENSIS** (Linn.) Endl.

Dolichos sesquipedalis Linn.; Blanco Fl. Filip. ed. 2 (1845) 402; ed. 3, 2 (1879) 375, *t. 286*=**VIGNA SINENSIS** (Linn.) Endl.

Fernandez-Villar considered that Blanco correctly interpreted the Linnean species, but the plant Blanco described is manifestly the form described by Linnaeus as *Dolichos sinensis*. It is universally known in the Philippines as *sitao*, a name of Chinese origin, and is very commonly cultivated in the vicinity of Manila. It is always planted and is not established in the Archipelago.

Illustrative specimen from San Pedro Macati, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 397*).

Dolichos echinulatus Blanco Fl. Filip. ed. 2 (1845) 401 (*echinatulus*) (sp. nov.); ed. 3, 2 (1879) 373=**VIGNA CYLINDRICA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 284 (*Phaseolus cylindricus* Linn.; *Dolichos catjang* Linn.).

Vigna sinensis Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 285*, non Endl.=**VIGNA CYLINDRICA** (Linn.) Merr.

This reduction follows Fernandez-Villar, although the specimens I have received under the Tagalog name *quibal* do not agree entirely with Blanco's description. It is certain, however, that the plant he described is a form of the cowpea. It is the plant that has been referred to *Vigna unguiculata* Walp., but Piper has recently shown that the Linnean *Dolichos unguiculatus* is a *Phaseolus*, not a *Vigna;* Torreya 12 (1912) 189–190. *Vigna catjang* Walp.=*V. cylindrica* (Linn.) Merr. is frequently considered as a synonym of *V. sinensis* (Linn.) Endl., but by some authors is treated as a variety of that species. I do not agree with Fernandez-Villar in referring *Dolichos sesquipedalis* Blanco Fl. Filip. ed. 2 (1845) 402; ed. 3, 2 (1879) 375, to this form, as Blanco definitely describes the Linnean species with the very long pods "mas de un pie hasta pie y medio de largo," the form commonly cultivated in Manila and known as *sitao*, described by Blanco under the name of *Phaseolus caracalla;* see above, *Species Blancoanae No. 397*.

Illustrative specimen from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 907*).

DOLICHOS Linnaeus

Glycine lucida Blanco Fl. Filip. (1837) 578, non Forst., nec Grah.=**Lablab cultratus** DC.; Blanco op. cit. ed. 2 (1845) 405; ed. 3, 2 (1879) 379, *t. 292*=**DOLICHOS LABLAB** Linn.

Blanco correctly interpreted *Lablab cultratus* DC. in the second edition of his Flora de Filipinas. The species is commonly cultivated throughout the Philippines and is frequently found growing wild, thoroughly established. It is not a native of the Archipelago, but was certainly purposely introduced in prehistoric times. It is very generally known in the Philippines as *batao*, a name of Chinese origin. *Dolichos lablab* Linn. is the type of the genus.

Illustrative specimen from Obando, Bulacan Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 827*).

Dolichos trilobus Blanco Fl. Filip. ed. 2 (1845) 403; ed. 3, 2 (1879) 375, non Linn.=**DOLICHOS FALCATUS** Klein.

This species is locally abundant at low altitudes in the settled areas of the Philippines. Blanco's *Dolichos trilobus* was erroneously reduced by Fernandez-Villar to *Phaseolus calcaratus* Roxb.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 230*).

PACHYRRHIZUS Richard

Pachyrrhizus jicamas Blanco Fl. Filip. (1837) 579 (sp. nov.)=**Pachyrrhizus angulatus** Rich.; Blanco op. cit. ed. 2 (1845) 405; ed. 3, 2 (1879) 380, *t. 249*=**PACHYRRHIZUS EROSUS** (L.) Urban.

A native of tropical America, introduced into the Philippines at an early date by the Spaniards, now thoroughly naturalized and widely distributed in the settled areas.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 570*).

PSOPHOCARPUS Necker

Dolichos tetragonolobus Linn.; Blanco Fl. Filip. (1837) 576; ed. 2 (1845) 402; ed. 3, 2 (1879) 374, *t. 293*=**PSOPHOCARPUS TETRAGONOLOBUS** (Linn.) DC.

A species commonly cultivated in the Philippines, probably of prehistoric introduction.

Illustrative specimen from Lamao, Bataan Province, Luzon, November, 1913 (*Merrill: Species Blancoanae No. 358*).

LEGUMINOSAE OF DOUBTFUL STATUS

Trichilia volubilis ? Blanco Fl. Filip. ed. 2 (1845) 249 (sp. nov.); ed. 3, 2 (1878) 98 p. p.=**DERRIS ELLIPTICA** Benth; p. p.=**ALBIZZIA SAPONARIA** Blume; **p. p.=** ? *Meliaceae indet.*

This description was manifestly based on material originating from at least two, perhaps three, entirely different plants. The description of the habit of the plant and its leaves is almost certainly *Derris elliptica* Benth.; of the fruits perhaps some meliaceous plant; of the properties and as to the native names *gogong toco* and *gogong bisaya*, certainly *Albizzia saponaria* Blume. The latter is a very common species in the Philippines, that Blanco does not otherwise describe, to which the two native names cited are universally applied, and which agrees with *Trichilia volubilis* Blanco as to the properties ascribed to it. Blanco does not describe the corolla and stamens and gives a very brief and imperfect description of the fruit. Fernandez-Villar erroneously reduced it to *Aglaia grandis* Miq., a species that does not extend to the Philippines. C. de Candolle was correct in excluding it from the *Meliaceae*.

Mimosa blancoana Llanos in Mem. Acad. Cienc. Madr. 2 (1859) 503 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 103=? **ENTADA PHASEOLOIDES** (Linn.) Merr.

I know of no Philippine tree that conforms with the characters indicated by Llanos for this species. It is strongly suspected that he had fragmentary material of *Entada phaseoloides* (Linn.) Merr., and that his 1-seeded indehiscent pod was merely a single joint of the large pod of this species.

GERANIACEAE

PELARGONIUM L'Héritier

Malva moschata Blanco Fl. Filip. (1837) 551; ed. 2 (1845) 385, ed. 3, 2 (1879) 344, non Linn.=**PELARGONIUM RADULA** (Cav.) L'Hérit.

The form that Blanco described was reduced by Fernandez-Villar to *Pelargonium odoratissimum* (Linn.) Ait., which, however, has nearly entire leaves, as does *Pelargonium fragrans* Willd. The Philippine specimens agree better with *Pelargonium capitatum* Ait. and with *P. radula* (Cav.) L'Hérit. and are apparently referable to the latter. The name "rose geranium" is applied to all four species. This species is found only in cultivation in the Philippines and never, or at least but very rarely, produces flowers in Manila.

Illustrative specimen from cultivated plants, Manila, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1043*).

OXALIDACEAE

BIOPHYTUM de Candolle

Oxalis sensitiva Linn.; Blanco Fl. Filip. (1837) 389=**BIOPHYTUM SENSITIVUM** (Linn.) DC.; Blanco op. cit. ed. 2 (1845) 272; ed. 3, 2 (1878) 142.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the settled areas of the Philippines and is certainly an introduced plant in the Archipelago.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 331*).

OXALIS Linnaeus

Oxalis acetosella Blanco Fl. Filip. (1837) 388; ed. 2 (1845) 272; ed. 3, 2 (1878) 141, non Linn.=**OXALIS REPENS** Thunb. (*O. corniculata* **Auct. p. p.**).

This species is common and widely distributed in the settled areas of the Philippines, apparently introduced. It is often confused with *O. corniculata* Linn.; see B. L. Robinson in Journ. Bot. 44 (1906) 391 for the distinguishing characters of the two.

Illustrative specimen from Manila, Luzon, December, 1913, here known as *taiñgang daga* (*Merrill: Species Blancoanae No. 226*).

AVERRHOA Linnaeus

AVERRHOA BILIMBI Linn.; Blanco Fl. Filip. (1837) 391; ed. 2 (1845) 273; ed. 3, 2 (1878) 144, *t. 138*.

The Linnean species was correctly interpreted by Blanco. It was introduced at an early date by the Spaniards and is now common and widely distributed in cultivation.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 255*).

AVERRHOA CARAMBOLA Linn.; Blanco Fl. Filip. (1837) 391; ed. 2 (1845) 274; ed. 3, 2 (1878) 145, *t. 139*.

Averrhoa pentandra Blanco Fl. Filip. (1837) 392 (sp. nov.); ed. 2 (1845) 274; ed. 3, 2 (1878) 145=**AVERRHOA CARAMBOLA** Linn.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the Philippines at low and medium altitudes in cultivation. It is commonly known as *bilimbin* or various forms of this name. Blanco's description of *Averrhoa pentandra* unmistakably applies to *Averrhoa carambola* Linn.; his specimens were from Malinta, immediately north of Manila. Fernandez-Villar referred it to *Connaropsis philippica* F.-Vill., which he described from specimens originating

in Panay, and which Hallier f. has transferred to the genus *Sarcotheca*, as *Sarcotheca philippica* Hallier f. Fernandez-Villar's species is apparently a true *Connaropsis* (*Sarcotheca*), although I have as yet seen no Philippine representative of this genus; Blanco's synonym is wrongly placed by him and must be excluded.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 406*).

ZYGOPHYLLACEAE

TRIBULUS Linnaeus

Tribulus lanuginosus Blanco Fl. Filip. (1837) 350; ed. 2 (1845) 245; ed. 3, 2 (1878) 91, non Linn.=**TRIBULUS CISTOIDES** Linn.

Blanco referred his specimen to *Tribulus lanuginosus* Linn. with doubt. The species is of very local occurrence in the Philippines, growing in waste places in towns. It is the only representative of the family *Zygophyllaceae* known from the Philippines. Certainly an introduced weed in the Archipelago.

Illustrative specimen from Parañaque, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 64*).

RUTACEAE

FAGARA Linnaeus

Fagara piperita Blanco Fl. Filip. (1837) 64; ed. 2 (1845) 47; ed. 3, 1 (1877) 87, non Linn.=? **FAGARA RHETSA** Roxb.

This species was reduced by Fernandez-Villar to *Zanthoxylum oxyphyllum* Edgw., a species that does not extend to the Philippines. Blanco's description is very imperfect, but the specimens distributed herewith undoubtedly illustrate the form he intended, although I am not at all sure that they are *Fagara rhetsa* Roxb. It is of wide distribution in the Philippines at low and medium altitudes. The native names cited by Blanco are of little value in making specific identifications in this case, as *cayutana* is a Tagalog name used in a generic sense for most species of *Fagara* (*Zanthoxylum*).

Illustrative specimens from Antipolo, Rizal Province, Luzon, March, June, 1915, there known as *cayutana* (*Merrill: Species Blancoanae Nos. 872, 961*).

Fagara pterota Blanco Fl. Filip. (1837) 66; ed. 2 (1845) 47; ed. 3, 1 (1877) 88, non Linn.=**FAGARA AVICENNAE** Lam.

Blanco's description is very imperfect, and he gives no data by which his *Fagara pterota* can be distinguished from his *F. piperita*. I suspect, however, that he intended as *Fagara pterota*

the form with small leaflets generally referred to *Fagara avicennae* Lam.

Illustrative specimen from Rizal Province, Luzon, July, 1914, fruit, October, 1916, there known as *cayutana* (*Merrill: Species Blancoanae Nos. 1060, 1002*).

EVODIA Forster

EVODIA BINTOCO Blanco Fl. Filip. ed. 2 (1845) 50 (sp. nov.); ed. 3, 1 (1877) 93.

This species was reduced by Fernandez-Villar to *Evodia latifolia* DC., and most of the recently collected Philippine material representing it has been determined as *Evodia latifolia* DC. It is not at all certain, however, that the Philippine form is the same as de Candolle's species, which was based wholly on *Ampacus latifolia* Rumph. Herb. Amb. 2: 186, *t. 61*. The Philippine form has also been described by me as *Evodia mindanaensis* Merr. in Philip. Forest. Bur. Bull. 1 (1903) 25; this is an exact synonym of *Evodia bintoco* Blanco. Blanco's material was from the Visayan Islands (Samar and Bohol); the species is widely distributed in the southern Philippines.

Illustrative specimen from Jaro, Leyte, *comm. C. A. Wenzel*, February, 1916 (*Merrill: Species Blancoanae No. 981*).

Orixa ternata Blanco Fl. Filip. (1837) 62 (sp. nov.); ed. 2, (1845) 45; ed. 3, 1 (1877) 84=**EVODIA TERNATA** (Blanco) Merr. in Philip. Journ. Sci. 9 (1914) Bot. 297.

This species was reduced by Fernandez-Villar to *Evodia robusta* Hook. f., a species not known from the Philippines. The description is very incomplete and might apply to almost any of the Philippine forms of the genus with glabrous leaves. In originally making the identification of *Evodia ternata* the chief determining character, other than the description, was the indicated distribution and time of flowering as given by Blanco; there is very little doubt as to the correctness of the interpretation.

Illustrative specimens from Rizal Province, Luzon, March, September, 1915 (*Merrill: Species Blancoanae Nos. 906, 913*).

Melicope tetrandra Blanco Fl. Filip. (1837) 293, non Roxb.=**Evodia triphylla** Blanco op. cit. ed. 2 (1845) 50; ed. 3, 1 (1877) 92, non DC.=? **EVODIA GLABRA** Blume.

Cissus frutescens Blanco Fl. Filip. (1837) 70 (sp. nov.)=**Cissus arborea** Blanco op. cit. ed. 2 (1845) 51; ed. 3, 1 (1877) 95, non Forst., nec Willd.=? **EVODIA GLABRA** Blume.

The first of the above was considered by Fernandez-Villar to have been correctly referred by Blanco to *Evodia triphylla* DC..

but Blanco described this species under *Fagara octandra*, and it is a *Melicope*, not an *Evodia;* see Merrill in Philip. Journ. Sci. 7 (1912) Bot. 375. The second was reduced by Fernandez-Villar to *Evodia roxburghiana* Benth., a species not definitely known from the Philippines. Blanco's descriptions are very indefinite, and the species he described might with equal propriety be reduced to almost any trifoliolate species of *Evodia* with glabrous leaves. I have rather arbitrarily reduced both to the Philippine form generally referred to *Evodia glabra* Blume, the most common and widely distributed representative of the genus in the Philippines. There is no very definite reason, however, for considering the Philippine specimens to represent Blume's species.

Illustrative specimen from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 904*).

MELICOPE Forster

Fagara octandra Blanco Fl. Filip. (1837) 67; ed. 2 (1845) 48; ed. 3, 1 (1877) 90, non Linn.=**MELICOPE TRIPHYLLA** (Lam.) Merr. (*Fagara triphylla* Lam., *Evodia triphylla* DC., *Melicope ternata* Vid., non Forst., *M. luzonensis* Engl.).

Bergera ternata Blanco Fl. Filip. (1837) 360 (sp. nov.); ed. 2 (1845) 254; ed. 3, 2 (1878) 108=? **MELICOPE TRIPHYLLA** (Lam.) Merr.

This species is widely distributed in the Philippines. For a discussion of the species and its synonymy see Merrill in Philip. Journ. Sci. 7 (1912) Bot. 373–378. F.-Villar reduced *Bergera ternata* Blanco to *Glycosmis bilocularis* Thwaites, a species that does not extend to the Philippines. It cannot possibly belong to this genus on account of the characters assigned to it by Blanco. It must be either an *Evodia* or a *Melicope*, and from the distribution of the various species of these two genera in the Philippines, is almost certainly *Melicope triphylla* (Lam.) Merr. Blanco's description is very short and imperfect.

Illustrative specimens from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 16*); Rizal Province, Luzon, June, 1914 (*Merrill: Species Blancoanae No. 673*).

LUNASIA Blanco

LUNASIA AMARA Blanco Fl. Filip. (1837) 783 (gen. et sp. nov.); ed. 3, 3 (1879) 191=**Pilocarpus amarus** Blanco op. cit. ed. 2 (1845) 540 (nom. nov.).

The genus *Lunasia* Blanco is a valid one, erroneously reduced by Blanco in the second edition of his Flora de Filipinas to

Pilocarpus. The generic name is derived from the Tagalog word *lunas*, one of the native names of the species. *Rabelaisia philippinensis* Planch. is a synonym. Common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Guinayangan, Tayabas Province, Luzon, April, 1913 (*Merrill: Species Blancoanae No. 5*).

ACRONYCHIA Forster

Melicope conferta Blanco Fl. Filip. ed. 2 (1845) 205 (sp. nov.); ed. 3, 2 (1878) 19=**ACRONYCHIA PEDUNCULATA** (Linn.) Miq. (*A. lauri-folia* Blume).

This species is widely distributed in the Philippines, extending from sea level to an altitude of at least 1,500 meters. The propriety of accepting the Linnean specific name for this species is doubtful. *Jambolifera pedunculata* Linn. Sp. Pl. (1753) 349 is based first on a reference to Fl. Zeyl. 139, and second on a reference to Bauhin Pin. 466; there is no description. In the Flora Zeylanica, however, there is a description, with three references not given in the Species Plantarum. All or most of the references are to the plant commonly called *Eugenia jambolana* Lam., and the description in the Flora Zeylanica seems to refer to Lamarck's species. The specimens in Hermann's herbarium, on which the Flora Zeylanica was based, are *Acronychia laurifolia* Blume; see Trimen in Journ. Linn. Soc. Bot. 24 (1887) 140, 142, sub numbers 139, 185.

Illustrative specimen from Rizal Province, Luzon, December, 1912 (*Merrill: Species Blancoanae No. 55*).

GLYCOSMIS Correa

Murraya cerasiformis Blanco Fl. Filip. (1837) 363 (*cerassiformis*) (sp. nov.)=**Murraya exotica** Blanco op. cit. ed. 2 (1845) 255; ed. 3, 2 (1878) 110, *t. 137*, non Linn.=**GLYCOSMIS COCHINCHINENSIS** (Lour.) Pierre.

Murraya lobata Blanco op. cit. 363 (sp. nov.); 256; 112=**GLYCOSMIS COCHINCHINENSIS** (Lour.) Pierre.

This species is very common and widely distributed in the Philippines at low and medium altitudes and is variable in its vegetative characters. There is no reasonable doubt as to the identity of Blanco's *Murraya cerasiformis* and *M. lobata*, and at the same time their identity with *Glycosmis cochinchinensis*. The mature fruits are globose, about 1 cm in diameter, very fleshy, somewhat translucent, and pale red in color.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 136*).

MICROMELUM Blume

Bergera inodora Blanco Fl. Filip. (1837) 361 (sp. nov.) = **Bergera koenigii** Blanco op. cit. ed. 2 (1845) 254; ed. 3, 2 (1878) 108, non Linn. = **MICROMELUM PUBESCENS** Blume (*M. molle* Turcz.).

Blanco's species was reduced by Fernandez-Villar to *Clausena indica* Oliv., a species that does not extend to the Philippines and one, moreover, to which his description does not at all apply. The characterization of the leaves as "muy blandas, vellosas," with the other data given by Blanco points unmistakably to this very softly pubescent form of *Micromelum pubescens* Blume (*M. molle* Turcz.). The expression: "El fruto se asemeja enteramente al del Piris" is further evidence as proof of the correctness of this reduction, as *piris* is one of the common names of the very closely allied *Micromelum tephrocarpum* Turcz. and is also applied to *M. pubescens* Blume.

Illustrative specimen from Arayat, Pampanga Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 719*).

Bergera compressa Blanco Fl. Filip. (1837) 360 (sp. nov.); ed. 2 (1845) 254; ed. 3, 2 (1878) 107 = **MICROMELUM COMPRESSUM** (Blanco) comb. nov.

Andromeda japonica Blanco op. cit. 371; 261; 120, non Thunb. = **MICROMELUM COMPRESSUM** (Blanco) Merr.

This species is identical with *Micromelum tephrocarpum* Turcz. in Bull. Soc. Nat. Mosc. 31[1] (1858) 367; the type of which is *Cuming 597* from Luzon. *Bergera compressa* Blanco was erroneously reduced by Fernandez-Villar to *Clausena willdenowii* W. & A., a species that does not extend to the Philippines, while *Andromeda japonica* Blanco was erroneously reduced by him to *Micromelum glabrescens* Benth.; Blanco's *Bergera compressa*, however, supplies the oldest specific name for the species. It is to be noted that Blanco describes the leaves of *Bergera compressa* as "simples," an error of observation on his part; the species is, without the slightest doubt, the form as here interpreted. Both it and the closely allied *Micromelum pubescens* Blume (*M. molle* Turcz.) are generally known as *piris;* in Baliuag, type locality for *Andromeda japonica* Blanco, both are still known as *tulibas*. The species is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1915, there known as *piris* (*Merrill: Species Blancoanae No. 884*).

MURRAYA Linnaeus

Connarus foetens Blanco Fl. Filip. (1837) 525 (sp. nov.) = **Connarus santaloides** Blanco op. cit. ed. 2 (1845) 366 (nom. nov.); ed. 3, 2 (1879 314, *t. 155* = **MURRAYA PANICULATA** (Linn.) Jack.

Murraya odorata Blanco Fl. Filip. ed. 2 (1845) 256 (sp. nov.); ed. 3, 2 (1878) 111 = **MURRAYA PANICULATA** (Linn.) Jack.

This species is very widely distributed in the Philippines at low and medium altitudes and is common in most parts of the Archipelago; it is occasionally also cultivated for its fragrant flowers. It is universally known in the Philippines as *camuning*. Blanco's specimens of *Murraya odorata* were from the forests of Angat, the species being very imperfectly characterized. I am confident, however, that *Murraya odorata* Blanco is identical with the form that Blanco otherwise described as *Connarus foetens* and as *Connarus santaloides*, all being synonyms of *Murraya paniculata* (Linn.) Jack (*M. exotica* Linn.). Fernandez-Villar's reduction of it to *Feronia elephantum* Corr. is wholly wrong, Correa's species not being a native of the Philippines, while Blanco's description does not at all conform with its characters.

Illustrative specimen from near Mandaloyon, Rizal Province, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 245*).

CLAUSENA Burman

Cookia wampi Blanco Fl. Filip. (1837) 358 (sp. nov.); ed. 2 (1845) 253; ed. 3, 2 (1878) 105 = **CLAUSENA LANSIUM** (Lour.) Skeels in U. S. Dept. Agr. Bur. Plant Ind. Bull. 176 (1909) 29 (*Quinaria lansium* Lour., *Cookia punctata* Sonn., non *Clausena punctata* W. & A., *C. wampi* Oliv.).

Blanco's specimens were from a tree cultivated in the grounds of the Pasig church, originating in China. The species since has apparently become extinct in the Philippines, but has recently been again introduced from Indo-China. The name cited by Blanco, *huampit*, is of Chinese origin.

Illustrative specimens from cultivated plants, Manila, originating in Indo-China, August, 1916 (*Merrill: Species Blancoanae No. 986*).

Cookia anisum olens Blanco Fl. Filip. (1837) 359 (sp. nov.) = **Cookia anisodora** Blanco op. cit. ed. 2 (1845) 253 (nom. nov.); ed. 3, 2 (1878) 106 = **CLAUSENA ANISUM OLENS** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 21 (*Clausena warburgii* Perk.).

Blanco's species was reduced by Fernandez-Villar to *Clausena excavata* Burm. f., but is entirely different from Burman's

species. Blanco's hybrid specific name is the oldest one for the species, and the form that he described is identical in all respects with *Clausena warburgii* Perk., which was based on Philippine material.

Illustrative specimen from Rizal Province, Luzon, October, 1916, locally known as *cayomanis* (*Merrill: Species Blancoanae No. 1012*).

TRIPHASIA Loureiro

Limonia trifoliata Linn.; Blanco Fl. Filip. (1837) 357; ed. 2 (1845) 252; ed. 3, 2 (1878) 103, *t. 129*=**TRIPHASIA TRIFOLIA** (Burm. f.) P. Wils. in Torreya 9 (1909) 33 (*T. trifoliata* DC., *T. aurantiola* Lour.).

The Linnean species was correctly interpreted by Blanco, but *Limonia trifolia* Burm. f. has priority. The species is common and widely distributed in the settled areas of the Philippines and is certainly an introduced plant in the Archipelago. It is universally known in the Philippines by its Spanish name *limoncitos*.

Illustrative specimen from Pasay, Rizal Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 795*).

ATALANTIA Correa

Limonia disticha Blanco Fl. Filip. (1837) 356 (sp. nov.)=**Limonia corymbosa** Blanco op. cit. ed. 2 (1845) 251 (nom. nov.); ed. 3, 2 (1878) 102=**ATALANTIA DISTICHA** (Blanco) Merr.

This species is common and widely distributed in the Philippines at low and medium altitudes, a form ascending to at least 1,500 meters altitude. *Atalantia nitida* Oliv. based on *Sclerostylis nitida* Turcz. (1858) is a synonym.

Illustrative specimen from Rizal Province, Luzon, December, 1912 (*Merrill: Species Blancoanae No. 594*).

Limonia linearis Blanco Fl. Filip. (1837) 357 (sp. nov.)=**Limonia monophylla** Blanco op. cit. ed. 2 (1845) 252; ed. 3, 2 (1878) 103, non Linn.=**ATALANTIA LINEARIS** (Blanco) Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 200 (*A. jagoriana* Engl., 1896).

Fernandez-Villar considered that Blanco correctly reduced his *Limonia linearis* to *Limonia monophylla* Linn.=*Atalantia monophylla* DC. However, Blanco's description does not at all agree with *Atalantia monophylla*, and moreover that species is unknown from the Philippines. *Atalantia linearis* is of local occurrence in the Philippines and usually, if not always, is found along streams in situations subject to temporary inundation during heavy rains.

Illustrative specimen from Montalban, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 746*).

CHAETOSPERMUM Swingle

Limonia glutinosa Blanco Fl. Filip. (1837) 358 (sp. nov.) = **Feronia ternata** Blanco op. cit. ed. 2 (1845) 252; ed. 3, 2 (1878) 104, *t. 124* = **CHAETOSPERMUM GLUTINOSUM** (Blanco) Swingle (*Aegle glutinosa* Merr., *Aegle decandra* Naves, *Limonia engleriana* Perk.).

This species is rather widely distributed in Luzon; it is commonly known as *taboc* or *tabog* (Tagalog). It occurs occasionally in cultivation in Manila.

Illustrative specimens from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 607*); Manila, Luzon, April, 1915 (*Merrill: Species Blancoanae No. 908*).

CITRUS Linnaeus

Citrus notissima Blanco Fl. Filip. (1837) 607 (sp. nov.); ed. 2 (1845) 424; ed. 3, 2 (1879) 406 = **CITRUS AURANTIFOLIUM** (Christm.) Swingle (*C. acida* Roxb.).

The common lime is widely distributed in the Philippines in cultivation and is variable in its fruit characters. The common Tagalog name for this is *dayap*, but the illustrative material, representing a form with fruits 4 to 6 cm in diameter, has the Ilocano name *gorong-gorong*.

Illustrative specimens from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 44*); Antipolo, Rizal Province, Luzon, January, 1914, there known as *dayap* (*Merrill: Species Blancoanae Nos. 45, 436*).

Citrus reticulata Blanco Fl. Filip. (1837) 610 (sp. nov.); ed. 2 (1845) 425; ed. 3, 2 (1879) 408 = **CITRUS NOBILIS** Lour.

This is the most popular and most abundant orange in the Manila market, the supply coming chiefly from Batangas Province. It is universally known in the Philippines as *naranjitas*, a name applied to no other form. The fruits, when mature, are usually 5 to 6 cm in diameter, greenish to yellow, with a very loose skin.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 402*).

Citrus papillaris Blanco Fl. Filip. (1837) 610 (*pappilaris*) (sp. nov.); ed. 2 (1845) 425; ed. 3, 2 (1879) 409 = **CITRUS NOBILIS** Lour., var.

Blanco's entire description consists of the following: "Tronco con espinas. Hojas dos veces aserradas, con alas en el peciolo. Baya grande, con un gran pezon en la base, y de aqui toma el nombre. Como los *Sintoris*. T., *Pis-ong*. Espec. nueva." By reference to the native name *sintoris* Blanco compares it to his *Citrus reticulata* = *Citrus nobilis* Lour. It is probably a variety of Loureiro's species, or perhaps a hybrid between it and

some other form. A figure of the fruit, from the same plant as the leaf-specimens distributed herewith, is given by Wester, Citriculture in the Philippines, *Bull. Bur. Agr.* (Philip.) 27 (1913), *pl. 15*, but this figure does not show the large nipple at the base of the fruit mentioned by Blanco.

Illustrative specimen from Lamao, Bataan Province, Luzon, November, 1914, *comm. P. J. Wester* (*Merrill: Species Blancoanae No. 207*).

CITRUS AURANTIUM Linn.; Blanco Fl. Filip. (1837) 609; ed. 2 (1845) 425; ed. 3, 2 (1879) 408.

This was reduced by Fernandez-Villar to *Citrus aurantium* Linn. var. *bigrardia* Hook. f. While manifestly not this variety, it is still apparently a form of the Linnean species. The fruit is nearly globose, pale-yellow or lemon-yellow, tight-skinned, usually very acid. This form is found only in cultivation and is abundant in the Manila markets in season.

Illustrative specimen from Balayan, Batangas Province, Luzon, September, 1914, there known as *cahel* (*Merrill: Species Blancoanae No. 782*).

CITRUS MITIS Blanco Fl. Filip. (1837) 610 (sp. nov.); ed. 2 (1845) 426; ed. 3, 2 (1879) 409, *t. 185*.

This species was reduced by F.-Villar to *Citrus medica* Linn. var. *limetta* Hook. f. which is certainly incorrect. *Citrus mitis* Blanco is apparently a valid species, characterized by its solitary flowers. It is commonly known as *calamansi* and *calamondin*, and is found only in cultivation.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914, there known as *calamondin* (*Merrill: Species Blancoanae No. 102*).

Citrus torosa Blanco Fl. Filip. (1837) 609 (sp. nov.); ed. 2 (1845) 425; ed. 3, 2 (1879) 407, *t. 408*=**CITRUS HYSTRIX** DC., var.

This species is apparently only a form of the variable *Citrus hystrix* DC., and is characterized by its coarsely warted or verrucose fruits. It is apparently a sylvan species, of rather wide distribution in the Philippines, and is widely known among the Tagalogs as *colobot*.

Illustrative specimen from Batangas Province, Luzon, August, 1914, there known as *colobot* (*Merrill: Species Blancoanae No. 46*).

Citrus decumana Linn.; Blanco Fl. Filip. (1837) 608; ed. 2 (1845) 424; ed. 3, 2 (1879) 406, *t. 304*=**CITRUS MAXIMA** (Burm. f.) Merr. Interpret. Herb. Amb. (1917) 296.

Citrus decumana was correctly interpreted by Blanco. It is common and widely distributed in the Philippines in cultivation, but is not a native of the Archipelago; undoubtedly of prehistoric introduction, probably from southern China. Its more general native names are *suha* and *lucban*. *Aurantium maximum* Burm. f. supplies the oldest specific name.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 78*).

SIMARUBACEAE

AILANTHUS Desfontaines

Ailanthus pongelion Blanco Fl. Filip. (1837) 380; ed. 2 (1845) 268; ed. 3, 2 (1878) 134, non Gmel.=**AILANTHUS BLANCOI** Merr., infra.

Fernandez-Villar reduced *Ailanthus pongelion* Blanco to *Ailanthus malabarica* DC., which I considered to be correct in my first paper on Blanco's species, Govt. Lab. Publ. (Philip.) 27 (1905) 29. Later, however, having secured flowering material from Bataan Province, together with fruiting material from Tayabas and Camarines, I proposed the species *Ailanthus philippinensis* Merr., of which *For. Bur. 2719 Borden* is the type. To this species I reduced *Ailanthus pongelion* Blanco, non Gmel., but I am now convinced that this was an error. Blanco's description is very imperfect, but his statement "Samaras muy largas" applies to the form I propose to call *Ailanthus blancoi*, which has fruits up to 12 cm in length, rather than to *A. philippinensis* Merr., which has fruits only 5 cm long. Below is given a description of the new species:

AILANTHUS BLANCOI Merrill sp. nov. § *Eupongelion*.

Arbor alta, usque ad 40 m alta, ramulis incrassatis; foliis glabris, circiter 80 cm longis, foliolis 9-jugatis, valde inaequilateralibus, usque ad 18 cm longis, acuminatis, integris, in siccitate pallidis; paniculis axillaribus, circiter 50 cm longis, subglabris vel leviter pubescentibus; floribus 5-meris, petalis extus pubescentibus, filamentis glabris; fructibus planis, valde reticulatis, apice rotundatis, circiter 12 cm longis, 3.5 ad 4 cm latis.

A tall tree, reaching a height of at least 40 meters, glabrous except the tips of the branchlets and parts of the inflorescence. Ultimate branchlets light-gray, stout, up to 2 cm in diameter, marked with large petiolar scars, the very tips pubescent. Leaves about 80 cm long, entirely glabrous, the leaflets about 9-jugate, obliquely oblong-ovate, somewhat falcate, entire, acuminate, base very inequilateral, pale when dry, 12 to 18 cm long, 5 to 6.5 cm wide, usually with a few glands on the lower surface

near the base; lateral nerves 8 to 12 on each side of the midrib; petiolules 1 to 1.5 cm long. Panicles up to 50 cm long, axillary, rather few flowered, lax, nearly glabrous or the branchlets somewhat pubescent. Flowers 5-merous. Petals oblong-elliptic, obtuse, 7 to 8 mm long, rather densely gray-pubescent externally. Filaments 4 mm long, glabrous; anthers 1.5 mm long. Carpels 5, gray-pubescent, the style-arms stellately spreading, 1.5 to 2 cm long. Samaras usually 3 to 5 from each flower, thickly coriaceous, glabrous, plane, not at all twisted, rounded at the apex, about 12 cm long, 3.5 to 4 cm wide, prominently reticulate.

LUZON, Laguna Province, grounds of the College of Agriculture at Los Baños, *For. Bur. 20881 Villamil* (type), in flower, Feb. 25, 1914, also fruiting material from the same tree, May, 1914 (*Species Blancoanae No. 606*), *For. Bur. 20350 Celestino*, May, 1913, from the same tree; Cayticling, *For. Bur. 22337 Mariano*, January, 1911, with very young flowers.

A species well characterized by its large, prominently reticulate samaras, its pubescent petals, glabrous filaments, and stellately spreading styles or style-arms. It is entirely different from *Ailanthus philippinensis* Merr. in vegetative characters, flowers, and fruits.

HARRISONIA Jussieu

Paliurus perforatus Blanco Fl. Filip. (1837) 174 (sp. nov.); ed. 2 (1845) 122; ed. 3, 1 (1877) 220=**HARRISONIA PERFORATA** (Blanco) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 236.

Paliurus dubius Blanco op. cit. 175 (sp. nov.); 123; 221=**HARRISONIA PERFORATA** (Blanco) Merr.

Fagara piperita Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 23*, non Linn.= **HARRISONIA PERFORATA** (Blanco) Merr.

This species is fairly common on dry hills about Manila. There is no doubt as to the identity of the two species described by Blanco. *Harrisonia bennetii* Hook. f. is a synonym.

Illustrative specimen from near Mandaloyon, Rizal Province, Luzon, April 20, 1914 (*Merrill: Species Blancoanae No. 433*).

SAMADERA Gaertn

Manungala pendula Blanco Fl. Filip. (1837) 306 (gen. et sp. nov.) =**Niota tetrapetala** Poir.; Blanco op. cit. ed. 2 (1845) 213; ed. 3, 2 (1878) 35=**SAMADERA INDICA** Gaertn.

The form that Blanco originally described as a new genus and species he later correctly reduced to *Niota tetrapetala* Poir., which, however, is in turn a synonym of *Samadera indica* Gaertn. The species is a very characteristic one, widely distributed in

the Philippines, but is of local occurrence and is not abundant; it is almost universally known as *manungal*.

BURSERACEAE

CANARIUM Linnaeus

Canarium commune Blanco Fl. Filip. (1837) 791, non Linn.=**Canarium pimela** Blanco op. cit. ed. 2 (1845) 545; ed. 3, 3 (1879) 201, *t.* 343, non Koen.=**CANARIUM VILLOSUM** (Miq.) F.-Vill. (*Canariopsis villosa* Miq., *Canarium cumingii* Engl.).

This species is very common and widely distributed in the Philippines and the only one of the genus growing naturally in the immediate vicinity of Manila. The leaves are pubescent when young, but usually become entirely glabrous in age. To be critically compared with this species and for the most part probably to be reduced to it are *Canarium luxurians* Engl. var. *monstrosum* Engl. (abnormal form of inflorescence due to fungus or to insect attack), *C. cumingii* Engl., *C. thyrsoideum* Perk., *C. stachyanthum* Perk., and *C. connarifolium* Perk.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 558*).

Canarium album Blanco Fl. Filip. (1837) 793; ed. 2 (1845) 546; ed. 3, 3 (1879) 201, non Raeusch=**CANARIUM LUZONICUM** (Blume) A. Gray (*C. carapifolium* Perk.).

This was reduced by Fernandez-Villar, through error, to *Canarium commune* Linn., a species that is unknown from the Philippines except for a single tree in cultivation in Mindanao. *Canarium luzonicum* A. Gray is based on *Pimela luzonica* Blume, which in turn is merely a new name for *Canarium album* Blanco. The species is widely distributed in the Philippines.

Illustrative specimen from San Mateo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 713*).

CANARIUM MULTIPINNATUM Llanos Frag. Pl. Filip. (1851) 107 (sp. nov.); F.-Villar & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 87.

This species was retained by Fernandez-Villar, Novis. App. (1880) 40, as a distinct one, and there is very little doubt but that it is identical with *Canarium radlkoferi* Perk. Frag. Fl. Philip. (1904) 96 in spite of the fact that Llanos's description is not in entire agreement with this species. Perkins's species is the only Philippine *Canarium* known to me that at all agrees with Llanos's description in any considerable number of characters and is common in central Luzon. The stipules, however, are linear, not foliaceous, the calyx is 3-merous, not 5-merous, and there are no bracts. The vegetative and fruit characters

agree. There is some probability that Llanos's description was based in two different plants, in spite of the fact that he states that he saw but one branch only; no species of *Canarium* has flowers and fruits at the same time, yet Llanos described both the flowers and the mature fruits.

Illustrative specimens from Antipolo, Rizal Province, Luzon, December, 1914, March, 1915, (certainly *Canarium radlkoferi* Perk., and with equal certainty *C. multipinnatum* Llanos at least in part) (*Merrill: Species Blancoanae Nos. 608, 909*).

GARUGA Roxburgh

Guiacum abilo Blanco Fl. Filip. (1837) 364 (sp. nov.) = **Icica abilo** Blanco op. cit. ed. 2 (1845) 256 (comb. nov.); ed. 3, 2 (1878) 113 = **GARUGA ABILO** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) **35** (1905) 73 [*G. mollis* Turcz. in Bull. Acad. Nat. Mosc. **31**[1] (1858) 475].

This species is common and widely distributed in the Philippines at low and medium altitudes and is universally known to the Tagalogs as *abilo*.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 79*).

MELIACEAE

TOONA Roemer

Cedrela odorata Blanco Fl. Filip. (1837) 184; ed. 2 (1845) 130; ed. 3, 1 (1877) 233, non Linn. = **TOONA CALANTAS** Merr. & Rolfe.

The species is manifestly very closely allied to *Toona* (*Cedrela*) *febrifuga* Roem. and may prove to be identical with it. It is of wide distribution in the Philippines and is universally known as *calantas*.

Illustrative specimen from Sagnay, Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 610*).

XYLOCARPUS Koenig

XYLOCARPUS GRANATUM Koenig; Blanco Fl. Filip. (1837) 298 (*Xilocarpus*); ed. 2 (1845) 207; ed. 3, 2 (1878) 24.

This species is common along the seashore, especially along tidal streams, throughout the Philippines. The species has been more or less confused with *Xylocarpus obovatus* Juss., the latter being a synonym; see Merrill, Interpret. Herb. Amb. (1917) 306.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 277*).

TURRAEA Linnaeus

Plagianthus humilis Blanco Fl. Filip. (1837) 526 (sp. nov.); ed. 2 (1845) 367; ed. 3, 2 (1879) 315, *t. 181* = **TURRAEA HUMILIS** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) **27** (1905) 30.

Blanco's species was reduced by Fernandez-Villar to *Turraea pumila* Benn., but Bennett's species is apparently distinct; at any rate Blanco's specific name is the older. It is rare and of very local occurrence in central Luzon.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 509*).

MELIA Linnaeus

Melia azedarach Blanco Fl. Filip. (1837) 345 (*acedarach*), non Linn.=**Melia composita** Blanco op. cit. ed. 2 (1845) 241; ed. 3, 2 (1878) 84, *t. 420*, non Willd.=**MELIA CANDOLLEI** Juss.

This species is widely distributed in the Philippines. It was erroneously reduced by Fernandez-Villar to *Melia dubia* Cav.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 338*).

SANDORICUM Cavanilles

Sandoricum ternatum Blanco Fl. Filip. (1837) 346 (sp. nov.)=**Sandoricum indicum** Cav.; Blanco op. cit. ed. 2 (1845) 242; ed. 3, 2 (1878) 85, *t. 127*=**SANDORICUM KOETJAPE** (Burm. f.) Merr.

This species is widely distributed in the Philippines at low altitudes in cultivation, also spontaneous in some forested regions in second-growth forests. It is probably not a native of the Philippines, but was purposely introduced from Malaya for the sake of its edible fruit. Its common name in the Philippines is *santol*.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 7*).

DYSOXYLUM Blume

Turraea decandra Blanco Fl. Filip. (1837) 347 (sp. nov.)=**Turraea virens** Blanco op. cit. ed. 2 (1845) 243; ed. 3, 2 (1878) 88, *t. 130*, non Linn.=**DYSOXYLUM DECANDRUM** (Blanco) Merr. (*Dysoxylum blancoi* Vid., *D. salutare* F.-Vill., and apparently *D. amooroides* Miq.).

This characteristic species is widely distributed in the Philippines at low altitudes.

Illustrative specimen from Manila, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 218*).

Turraea octandra Blanco Fl. Filip. (1837) 349 (sp. nov.); ed. 2 (1845) 244; ed. 3, 2 (1878) 89=**DYSOXYLUM OCTANDRUM** (Blanco) comb. nov. [*D. schizochitode* (Turcz.) C. DC.].

Blanco's species was correctly reduced by Fernandez-Villar to *Dysoxylum schizochitode* (Turcz.) C. DC., but the specific name *octandra* is the older and is here adopted. Blanco's description

agrees absolutely with Turczaninow's *Hartighsea schizochitodes* which was based on *Cuming 1560* from Mindoro. The species is of local occurrence in parts of Luzon and Mindoro at low and medium altitudes and is still known as *himamao*, the native name cited by Blanco.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1915, there known as *himamao* (*Merrill: Species Blancoanae No. 856*).

Boswellia ? obliqua Blanco Fl. Filip. ed. 2 (1845) 243 (*oblicua*) (sp. nov.); ed. 3, 2 (1878) 87=? **DYSOXYLUM sp.**

A species of doubtful status, although certainly meliaceous, and apparently a *Dysoxylum*. Fernandez-Villar erroneously reduced it to *Ganophyllum falcatum* Blume, and misled by this reduction I proposed the name *Ganophyllum obliquum* (Blanco) Merr. for the species, Blanco's specific name being older than Blume's. However, it is very manifest, from an examination of Blanco's description, that *Boswellia obliqua* has nothing to do with *Ganophyllum falcatum*, so that the application of Blanco's specific name to Blume's species was an error. The native name cited by Blanco is *pandapanda*, but this is unknown to me and is probably little or not at all used to-day.

Boswellia ? integra Blanco Fl. Filip. ed. 2 (1845) 242 (sp. nov.); ed. 3, 2 (1878) 86=? **DYSOXYLUM sp.**

Fernandez-Villar reduced this to *Protium javanicum* Burm. f., of the *Burseraceae*, a species that does not extend to the Philippines and one to which Blanco's description does not at all apply. The description is very imperfect, but I think a *Dysoxylum* is intended. Blanco's specimens were from the mountains of San Mateo, Rizal Province, Luzon, a region well known botanically, yet from the data available I am not yet able to reduce the species beyond its possible genus. The flowers are not described.

CHISOCHETON Blume

Trichilia pentandra Blanco Fl. Filip. (1837) 355 (sp. nov.); ed. 2 (1845) 249; ed. 3, 2 (1878) 97=**CHISOCHETON PENTANDRUS** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 31 (*Dasycoleum philippinum* Turcz., *Chisocheton philippinus* Harms, *C. ceramicus* F.-Vill., non Miq.).

Blanco's description is not good, nor does it apply fully to our common *Chisocheton philippinus* Harms, but still there is no doubt as to the identity of the species he intended. The leaves are alternate and not "opposite," as described by Blanco, and the calyx is truncate or but very obscurely 5-toothed; other-

wise Blanco's description applies, and it does not apply to any other Philippine plant known to me. The species is very common and widely distributed at low and medium altitudes in the Philippines, and I have before me more than 80 individual collections; on these specimens are recorded 22 different native names, and but a single specimen bears the Tagalog name *agapanga* cited by Blanco, and none of them bears the Tagalog name *salaqui* also given by Blanco for this species.

Illustrative specimens from Mount Maquiling, Laguna Province, Luzon, November, 1912 (flower), March, 1913 (fruit) (*Merrill: Species Blancoanae No. 6*).

LANSIUM Correa

LANSIUM DOMESTICUM Correa; Blanco Fl. Filip. ed. 2 (1845) 228; ed. 3, 2 (1878) 62, *t. 117.*

Correa's species was correctly interpreted by Blanco. It is extensively cultivated in some parts of the Philippines, in Luzon notably in Batangas and Laguna Provinces. It is certainly not a native of the Philippines, unless possibly truly indigenous in Mindanao, but has been introduced for the sake of its edible fruits. It is generally known in Luzon as *lansone* or *lansones*. The flowers are borne chiefly on the larger branches.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 53*).

APHANAMIXIS Blume

Trichilia tripetala Blanco Fl. Filip. (1837) 354 (sp. nov.); ed. 2 (1845) 248; ed. 3, 2 (1878) 97=**APHANAMIXIS TRIPETALA** (Blanco) comb. nov. (*Amoora elmeri* Merr.).

This was reduced by Fernandez-Villar to *Amoora rohituka* W. & A., a species not definitely known from the Philippines, but to which the Philippine *Amoora elmeri* Merr. is manifestly allied. Among all the known Philippine *Meliaceae* this is the only species that conforms to Blanco's description, and the description applies here in all respects except that the leaves are alternate, not opposite, although the leaflets are opposite, and the inflorescence bearing perfect flowers is a spike, not a raceme. The glandular character of the leaves. expressly mentioned by Blanco, is very evident on some, but not on all specimens. The Tagalog name *salaquing pula* appears in our herbarium on species of *Aglaia*, not of *Amoora* or *Aphanamixis*.

Illustrative specimens from Ilocos Norte Province and from Benguet Subprovince, Luzon, November, 1916 (*Merrill: Species Blancoanae No. 996*, ♂ flowers; *No. 988*, ♀ flowers).

AGLAIA Loureiro

Portesia rimosa Blanco Fl. Filip. (1837) 297 (sp. nov.) = **Trichilia rimosa** Blanco op. cit. ed. 2 (1845) 250 (comb. nov.); ed. 3, 2 (1878) 99 = **AGLAIA RIMOSA** (Blanco) comb. nov. (*A. hexandra* Turcz.).

Blanco's species was reduced by Fernandez-Villar to *Amoora canarana* Hiern, a species that does not extend to the Philippines, and one to which Blanco's description does not at all apply. While the description is rather vague and incomplete, it is ample, and applies in all essentials to *Aglaia hexandra* Turcz. Moreover this species is known in Batangas, the region from which Blanco secured his material, as *busilac*, and in Batangas *Aglaia hexandra* Turcz. flowers in May, the indicated month of anthesis for *Portesia rimosa* Blanco. The species is of local occurrence in Pangasinan, Nueva Ecija, and Batangas Provinces, Luzon, and also occurs in Mindoro.

Illustrative specimen from San José, Batangas Province, Luzon, February, 1915, there known as *busilac* (*Merrill: Species Blancoanae No. 765*).

Melia iloilo Blanco Fl. Filip. ed. 2 (1845) 241 (sp. nov.); ed. 3, 2 (1878) 85 = **AGLAIA ILOILO** (Blanco) Merr. in Philip. Journ. Sci. 9 (1914) Bot. 533.

This species was reduced by Fernandez-Villar to *Aglaia argentea* Blume, and it is certainly very closely allied to that species. For a discussion of the identity of Blanco's species and the characters by which it is distinguished from *Aglaia argentea* Blume see Merrill l. c.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 867*).

Argophilum pinnatum Blanco Fl. Filip. (1837) 186 (sp. nov.); ed. 2 (1845) 131; ed. 3, 1 (1877) 235 = **AGLAIA PINNATA** (Blanco) comb. nov. (*Aglaia glomerata* Merr.!).

Fernandez-Villar reduced this to *Aglaia angustifolia* Miq., in which he was correct as to the genus, but manifestly wrong as to the species, for Miquel's species does not extend to the Philippines, nor does Blanco's description agree with it. The characters assigned by Blanco to *Argophilum pinnatum* conform entirely to those of *Aglaia glomerata* Merr., a species strongly marked and one that is widely distributed in the Philippines, but which is perhaps not specifically distinct from *Aglaia palembanica* Miq. Other very closely allied forms are *Aglaia harmandiana* Pierre and *A. cordata* Hiern; in any case, however, Blanco's specific name is much the older.

Illustrative specimen from Alabat Island, December 23, 1916 (*Merrill: Species Blancoanae No. 1055*).

MELIACEAE OF UNCERTAIN STATUS

Cedrela taratara Blanco Fl. Filip. ed. 2 (1845) 131 (sp. nov.); ed. 3, 1 (1877) 234=?

A species of entirely doubtful status, but possibly in part the same as *Toona calantas* Merr. & Rolfe. Blanco definitely states that he had specimens from Bohol, where it was known as *sandana*, but also cites the Tagalog name *taratara* and the Bicol name *baloncauit*. He describes only the leaves and saw no flowers and fruits. It is suspected that it is in part, as to the *sandana* from Bohol, the same as *Pterocarpus indicus* Willd., for Blanco describes the wood of his Bohol specimen as being similar to that of *asana=Pterocarpus indicus* Willd. *Taratara* is sometimes applied to *Dysoxylum cumingianum* C. DC., is recorded for *Dysoxylum* sp. from Negros, for *Aglaia laevigata* Merr., and for a species of *Myristica*, while *taratara babaye* (i. e., female *taratara*) is recorded for *Aglaia cuprea* Merr. The name *bolongcauit* is unknown as applied to any tree; it means "leaf" and "hook," i. e., a falcate leaf. Fernandez-Villar retains the species under Blanco's name.

MALPIGHIACEAE

TRISTELLATEIA Thouars

Hiraea reclinata Blanco Fl. Filip. (1837) 378, non Jacq.=**Tristellateia malintana** Blanco op. cit. ed. 2 (1845) 267 (sp. nov.); ed. 3, 2 (1878) 132, *t. 435*=**TRISTELLATEIA AUSTRALASIAE** Rich.

In thickets near tidal streams, back of mangrove, etc., throughout the Philippines.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 278*).

HIPTAGE Gaertner

Triopteris jamaicensis Blanco Fl. Filip. (1837) 350; ed. 2 (1845) 267; ed. 3, 2 (1878) 133, non Linn.=**HIPTAGE LOHERI** Merr. nom. nov.

Blanco's *Triopteris jamaicensis* was reduced by Fernandez-Villar to *Hiptage madablota* Gaertn., which is certainly correct as to the genus, but wrong as to the species; Gaertner's species is unknown from the Philippines. I am convinced that I am correct in interpreting *Triopteris jamaicensis* Blanco as that species of *Hiptage* which is found in the vicinity of Manila. Blanco cites specimens from Malinta, Rizal Province, Luzon, and from Cebu; the latter doubtless the form recently described by Mr. Elmer as *Hyptage cebuensis*. *Hiptage loheri* is very closely allied to *H. javanica* Blume, and the specimens I now refer to *H. loheri* were previously reported by me as *H. javanica* Blume.

The following specimens from Rizal Province, Luzon, I now refer to *H. loheri: Loher 5768, 5786, 5789, Merrill 1704, 5046, For. Bur. 420, 2660 Ahern's collector.*

Illustrative specimen from Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 824*).

POLYGALACEAE

POLYGALA Linnaeus

Polygala monspeliaca Blanco Fl. Filip. (1837) 557, ed. 2 (1845) 388 (*monspelica*); ed. 3, 2 (1879) 350, non Linn.=**POLYGALA CHINENSIS** Linn. **var. LINEARIFOLIA** (Willd.) Chod.

This species was reduced by Fernandez-Villar to *Polygala telephioides* Willd., but is manifestly the form described by Willdenow from Philippine material as *Polygala linearifolia,* and which Chodat has reduced to *Polygala chinensis* Linn. as a variety. It is the only species of the genus found near Manila, Blanco's specimens being from Mandaloyan which is practically a suburb of Manila. Not common, but widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 473*).

SALOMONIA Loureiro

Amorpha pedalis Blanco Fl. Filip. (1837) 553 (sp. nov.); ed. 2 (1845) 387; ed. 3, 2 (1879) 348=**SALOMONIA CILIATA** (L.) DC. (*S. oblongifolia* DC.!, *S. ramosissima* Turcz.!).

Trimen (Fl. Ceyl. 1: 83) calls attention to the fact that *Polygala ciliata* Linn., the type of which he has examined in Hermann's herbarium, is the form that was later described by de Candolle as *Salomonia oblongifolia* DC. The Linnean species is based on a single reference, *Fl. Zeyl. no. 268,* which in turn is based only on Hermann's specimen.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 332*).

SECURIDACA Linnaeus

Securidaca volubilis Blanco Fl. Filip. (1837) 556, non Linn.=**Securidaca ? complicata** Blanco op. cit. ed. 2 (1845) 388; ed. 3, 2 (1879) 349, non HBK.=**SECURIDACA CORYMBOSA** Turcz.

This species, as interpreted by Blanco, was reduced by Fernandez-Villar to *Securidaca tavoyana* Wall., one that does not extend to the Philippines. It is identical with *S. corymbosa* Turcz., the type of which was Philippine (*Cuming 1031,* Pan-

gasinan Province, Luzon), *S. cumingii* Hassk. being a synonym. It is widely distributed in Luzon at low and medium altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 691*).

DICHAPETALACEAE

DICHAPETALUM Thouars

Quilesia sericea Blanco Fl. Filip. (1837) 177 (gen. et sp. nov.); ed. 2 (1845) 125; ed. 3, 1 (1877) 224=**DICHAPETALUM SERICEUM** (Blanco) comb. nov. (*Chailletia benthamiana* Turcz., *Dichapetalum benthamianum* Engl.).

Fernandez-Villar reduced this to *Chailletia griffithii* Hook. f., a species that is not known from the Philippines and one to which Blanco's description does not apply. The type of Turczaninow's species was from Ilocos Norte Province, Luzon, and Blanco's material was also from the Ilocano provinces. His description conforms entirely with *Chailletia benthamiana* Turcz., and I have not the slightest hesitation in making the reductions here indicated. The species is known only from Ilocos Norte and Ilocos Sur Provinces, Luzon.

Illustrative specimen from Burgos, Ilocos Norte Province, November, 1916 (*Merrill: Species Blancoanae No. 991*).

Riana ? tricapsularis Blanco Fl. Filip. (1837) 850 (sp. nov.); ed. 2 (1845) 126; ed. 3, 1 (1877) 225=**DICHAPETALUM TRICAPSULARE** (Blanco) **Merr. Govt. Lab. (Philip.) Publ. 35 (1906) 35.**

Fernandez-Villar reduced this to *Chailletia helferiana* Kurz., a species that does not extend to the Philippines. In making the transfer to *Dichapetalum*, I redescribed the species from specimens collected on Mount Mariveles, Bataan Province, Luzon. Blanco's material was from Angat, Bulacan Province, Luzon, and his description agrees fairly well with the species as I have interpreted it.

EUPHORBIACEAE

FLUGGEA Willdenow

Cicca pentandra Blanco Fl. Filip. (1837) 701 (sp. nov.); ed. 2 (1845) 486; ed. 3, 3 (1879) 105=**FLUGGEA VIROSA** (Roxb.) Baill. (*F. obovata* (Willd.) Wall., *F. microcarpa* Bl.).

This species is common and widely distributed in the Philippines at low and medium altitudes, in thickets, more or less open country, etc., but not in the primeval forest.

Illustrative specimen from near Mandaloyan, Rizal Province, Luzon, April 18, 1914 (*Merrill: Species Blancoanae No. 242*).

CICCA Linnaeus

Cicca acidissima Blanco Fl. Filip. (1837) 700 (sp. nov.); ed. 2 (1845) 486; ed. 3, 3 (1879) 105, *t. 303*=**CICCA ACIDA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 314 (*Averrhoa acida* Linn., *Cicca disticha* Linn., *Phyllanthus distichus* Muell.-Arg., *Phyllanthus acidissimus* Muell.-Arg.).

This species is widely distributed in the Philippines in cultivation but is nowhere abundant. It is certainly of prehistoric introduction into the Archipelago and a purposely introduced species. Blanco's *Cicca acidissima* is the whole basis of *Phyllanthus acidissimus* Muell.-Arg., non Noronh. The genus *Cicca* seems to be sufficiently distinct from *Phyllanthus;* see C. B. Robinson in Philip. Journ. Sci. 4 (1909) Bot. 87.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 617*).

PHYLLANTHUS Linnaeus

Phyllanthus carolinianus Blanco Fl. Filip. (1837) 691, non Walt.=**Phyllanthus kirganelia** Blanco op. cit. ed. 2 (1845) 480; ed. 3, 3 (1879) 96, non Willd.=**PHYLLANTHUS NIRURI** Linn.

There is very little doubt as to the correctness of this reduction, Blanco's description agreeing in all essentials, the form described by him being a small one: "Esta planta a lo más se hace de un palmo de alto." The species is very common throughout the settled areas of the Philippines at low altitudes and would certainly have been observed by Blanco. To this species I also reduce **Kirganelia pumila** Blanco Fl. Filip. (1837) 713 (*pumilla*) (sp. nov.), ed. 2 (1845) 493, ed. 3, 3 (1879) 117, the type of *Phyllanthus pumilus* Muell.-Arg. in DC. Prodr. 15[2] (1866) 349, this also being a small form: "a lo más de un palmo de altura." Blanco's descriptions of both fit *Phyllanthus niruri* Linn. better than any other Philippine species known to me. See Robinson in Philip. Journ. Sci. 4 (1909) Bot. 81, 86.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 101*).

Cicca decandra Blanco Fl. Filip. (1837) 701 (sp. nov.); ed. 2 (1845) 487; ed. 3, 3 (1879) 106 *t. 239*=**PHYLLANTHUS RETICULATUS** Poir.

This species is common and widely distributed in the Philippines at low altitudes.

Illustrative specimens from Manila, Luzon, October, December, 1913, locally known as *tintatintahan* (Tagalog; from Sp. *tinta*=ink, the black berries sometimes used to make ink) (*Merrill: Species Blancoanae Nos. 596, 674*).

Phyllanthus niruri Blanco Fl. Filip. (1837) 690, non Linn.=**Phyllanthus tetrander** Blanco op. cit. ed. 2 (1845) 480; ed. 3, 3 (1879) 95, non Roxb.=**PHYLLANTHUS BLANCOANUS** Muell.-Arg.

Phyllanthus blancoanus Muell.-Arg. was based only on Blanco's description and must be typified by Blanco's *Phyllanthus niruri*. For a discussion and redescription of the species see C. B. Robinson in Philip. Journ. Sci. 4 (1909) Bot. 83. *Phyllanthus blancoanus* is known only from a few localities in central Luzon.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 160*).

GLOCHIDION Forster

Kirganelia triandra Blanco Fl. Filip. (1837) 711 (sp. nov.); ed. 2 (1845) 492; ed. 3, 3 (1879) 115=**GLOCHIDION TRIANDRUM** (Blanco) C. B. Rob. (*Phyllanthus triandrus* Muell.-Arg.; *Glochidion eleutherostylum* Muell.-Arg.).

This species is widely distributed in the northern and central Philippines at low and medium altitudes.

Illustrative specimen from Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 309*).

Kirganelia alba Blanco Fl. Filip. (1837) 713 (sp. nov.); ed. 2 (1845) 494; ed. 3, 3 (1879) 117=**GLOCHIDION ALBUM** (Blanco) Boerl.

Zarcoa philippica Llanos in Bot. Zeit. 15 (1857) 423 (gen. et sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4 [1] (1880) 102=**GLOCHIDION ALBUM** (Blanco) Boerl.

This species is widely distributed in the Philippines and presents considerable variation, especially in its pubescence. Blanco's description is the whole basis for *Phyllanthus albus* Muell.-Arg. *Zarcoa philippica* Llanos was reduced by Fernandez-Villar to *Phyllanthus* (*Glochidion*) *philippinensis* Muell.-Arg. var. *glaber* Muell.-Arg. (=*Glochidion philippicum* C. B. Rob.). However, Llanos's description does not at all apply to *Glochidion philippicum* (Cav.) C. B. Rob., but does manifestly apply to *Glochidion album* (Blanco) Boerl. See Robinson in Philip. Journ. Sci. 4 (1909) Bot. 99.

Illustrative specimen from Los Baños, Laguna Province, Luzon, *comm. F. C. Gates*, March, 1914 (*Merrill: Species Blancoanae No. 646*).

Kirganelia villosa Blanco Fl. Filip.. (1837) 712 (sp. nov.); ed. 2 (1845) 493; ed. 3, 3 (1879) 116, *t. 399*, non *Phyllanthus villosus* Muell.-Arg., nec *Glochidion villosum* Miq.=**GLOCHIDION LLANOSII** Muell.-Arg.

This species is widely distributed in Luzon at low altitudes. It is locally abundant.

Illustrative specimens from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 756*); Rizal Province, Luzon, September, 1915 (*Merrill: Species Blancoanae No. 931*).

Gyrostemon blancoi Llanos Frag. Pl. Filip. (1851) 74 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 58=**GLOCHIDION PHILIPPICUM** (Cav.) C. B. Rob. (*G. philippense* Benth.).

This reduction was made by Fernandez-Villar, and there is every reason to consider that it is correct. The species is common and widely distributed in the Philippines at low and medium altitudes. The type of *Bradleia philippica* Cav.=*Glochidion philippicum* (Cav.) C. B. Rob. (*G. philippense* Benth.) was from the Philippines.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 683*).

Kirganelia nigrescens Blanco Fl. Filip. (1837) 712 (sp. nov.); ed. 2 (1845) 493; ed. 3. 3 (1879) 115=? **GLOCHIDION LANCIFOLIUM** C. B. Rob.

This species was reduced by Fernandez-Villar to *Glochidion molle* Blume, but Blanco's description does not at all apply to that form. If Blanco's description is correct, then my present reduction of the species is wrong. I suspect, however, that in describing the flowers Blanco erred as to the number of parts. See Robinson in Philip. Journ. Sci. 4 (1909) Bot. 90.

Illustrative specimen from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 905*).

ANTIDESMA Linnaeus

Cansjera grossularioides Blanco Fl. Filip. (1837) 73 (*Cansiera*) (sp. nov.); ed. 2 (1845) 53; ed. 3, 1 (1877), 99 *t. 26* (as *Antidesma alexiteria*)= **ANTIDESMA GHAESEMBILLA** Gaertn.

This species is common and widely distributed in the Philippines at low and medium altitudes, being characteristic of the regions locally called "cogonales," that is, those open areas characterized by the predominance of the cogon grass (*Imperata cylindrica* Cyr.), the scattered trees of *Antidesma ghaesembilla* Gaertn. frequently giving the cogonales a parklike aspect. Blanco's description of the leaves as "elipticas con puntita en el apice" applies unmistakably to Gaertner's species and to no other known Philippine species of the genus.

Illustrative specimens from Los Baños, Laguna Province, Luzon, June, 1914, *comm. E. Quisumbing* (*Merrill: Species Blancoanae No. 375*); Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 488*).

Stilago bunius Linn.; Blanco Fl. Filip. (1837) 782; ed. 2 (1845) 539; ed. 3, 3 (1879) 189, *t. 361*=**ANTIDESMA BUNIUS** (Linn.) Spreng.

This species is common and widely distributed in the Philippines in the settled areas at low altitudes. It is probably a purposely introduced species in the Philippines, although now thoroughly naturalized. Commonly known as *bignay*.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, 1914 (*Merrill: Species Blancoanae No. 8*).

Cansjera pentandra Blanco Fl. Filip. (1837) 73 (*Cansiera*) (sp. nov.); ed. 2 (1845) 53; ed. 3, 1 (1877) 98=**ANTIDESMA PENTANDRUM** (Blanco) comb. nov. (*Antidesma rostratum* Tul. in Ann. Sci. Nat. III 15 (1851) 218).

Cansjera rheedii Blanco, op. cit. 73 (*Cansiera rheedi*); 52; 98, *t. 25*, non aliorum=**ANTIDESMA PENTANDRUM** (Blanco) Merr.

There is no doubt as to the identity of both of Blanco's species and equally no doubt that only a single species is represented. They were separated by him only on the number of stamens, *C. rheedii* with four stamens, *C. pentandra* with five stamens, but as is well known, the number of stamens in many species of *Antidesma* is variable, even in flowers from the same plant. The description of *Cansjera pentandra* is very short and imperfect, but so far as it goes it applies unmistakably to Tulasne's *Antidesma rostratum*, while Blanco states at the end of his description: "Todo lo demás como en la especie anterior [*C. rheedii*]." *Cansjera rheedii* Blanco (non aliorum) was erroneously reduced by Fernandez-Villar to the very different *Antidesma ghaesembilla* Gaertn.; and *C. pentandra* Blanco, by error, to the very different *A. cumingii* Muell.-Arg., Blanco's descriptions agreeing with neither of the species to which Fernandez-Villar reduced them. The species is very common in thickets in the vicinity of Manila and is very generally known as *bignay pogo*.

Illustrative specimens from Pasay, Rizal Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 272*); Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 31*).

ANTIDESMA SPICATUM Blanco Fl. Filip. (1837) 794 (sp. nov.)=**Antidesma alexiteria** Blanco op. cit. ed. 2 (1845) 547; ed. 3, 3 (1879) 202, non Linn., nec aliorum.

Blanco's *Antidesma spicatum* is a valid species, and he erred in reducing it to *A. alexiteria* Linn. in the second edition of his Flora de Filipinas. It is the species described by me as *Antidesma edule*, Govt. Lab. Publ. (Philip.) 17 (1904) 26. Fernandez-Villar reduced it to *Antidesma ghaesembilla* Gaertn., an

impossible reduction from Blanco's description of the leaves as "aovadas, alargadas." The only Philippine species of the genus to which Blanco's description at all applies is the form described by me as *Antidesma edule*. The Tagalog name *calamantao* cited by Blanco does not appear on any of our numerous specimens of *Antidesma*, but is applied to the entirely different *Erythrophloeum densiflorum* (Elm.) Merr., of the *Leguminosae;* Blanco's description, however, is unmistakably that of an *Antidesma*. Widely distributed at low and medium altitudes in the northern Philippines.

Illustrative specimens from Mount Arayat, Pampanga Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 718*); San Mateo, Rizal Province, Luzon, June, 1912 (*Merrill: Species Blancoanae No. 915*).

CLEISTANTHUS Hooker f.

Gluta orgyalis Blanco Fl. Filip. ed. 2 (1845) 451 (sp. nov.); ed. 3, 3 (1879) 49=**CLEISTANTHUS ORGYALIS** (Blanco) Merr.

Fernandez-Villar reduced this to *Cleistanthus ferrugineus* Muell.-Arg., a species that does not extend to the Philippines. For a full description of the species see C. B. Robinson in Philip. Journ. Sci. 3 (1908) Bot. 189.

BRIDELIA Willdenow

Clutia stipularis Linn.; Blanco Fl. Filip. (1837) 818 (sp. nov.); ed. 2 (1845) 564; ed. 3, 3 (1879) 229=**BRIDELIA STIPULARIS** (Linn.) Blume.

The Linnean species was correctly interpreted by Blanco, but is referable to the genus *Bridelia*. It is very common and widely distributed in the Philippines at low altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 551*).

CROTON Linnaeus

Croton glandulosum Blanco Fl. Filip. (1837) 754 (sp. nov.)=**Croton muricatum** Blanco op. cit. ed. 2 (1845) 518 (nom. nov.); ed. 3, 3 (1879) 154, *t. 383*=**CROTON TIGLIUM** Linn.

The croton oil plant is commonly cultivated about dwellings throughout the Philippines, its chief use being to stupefy fish. Certainly a purposely introduced plant in the Philippines.

Illustrative specimen from Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 308*).

CLAOXYLON Jussieu

Prockia ? albicans Blanco Fl. Filip. (1837) 430 (sp. nov.); ed. 2 (1845) 299; ed. 3, 2 (1878) 192=**CLAOXYLON ALBICANS** (Blanco) comb. nov. (*C. elongatum* Merr.).

Blanco's description applies perfectly to the form I described as *Claoxylon elongatum*, and I have not the slightest hesitation in substituting Blanco's specific name. Fernandez-Villar was entirely wrong in referring it to *Alchornea blumeana* Muell.-Arg., a species that does not extend to the Philippines, and one to which Blanco's description does not at all conform. It is to be noted that Pax & K. Hoffman, Engl. Pflanzenreich 63 (1914) 112, have confused *Claoxylon elongatum* Merr. and *C. arboreum* Elm. and have referred the type and only specimen cited in the original description of the latter to *Claoxylon pedicellare* Pax & K. Hoffm.

Illustrative specimen from Los Baños, Laguna Province, Luzon, September, 1916, *comm. F. W. Foxworthy* (*Merrill: Species Blancoanae No. 1008*).

DORYXYLON Zollinger

(*Sumbavia* Baillon)

Adelia acidoton Blanco Fl. Filip. (1837) 815; ed. 2 (1845) 562; ed. 3, 3 (1879) 226, *t. 463*, non Linn.=**DORYXYLON SPINOSUM** Zoll. (*Sumbavia rottleroides* Baill.).

This species is of local occurrence in Luzon, being known from Union, Pangasinan, Pampanga, Nueva Ecija, Bulacan, Rizal, and Laguna Provinces, Luzon, but from no other parts of the Philippines. *Sumbavia rottleroides* Baill. has been the generally used name for the species, but this is antedated by *Doryxylon spinosum* Zoll., and the case does not appear in the lists of *nomina conservanda* adopted by the Vienna and Brussels Botanical Congresses. The synonymy is as follows:

DORYXYLON SPINOSUM Zoll. in Nat. Tijdschr. Nederl. Ind. 14 (1857) 152.

Adelia acidoton Blanco Fl. Filip. (1837) 815, non Linn.
Sumbavia rottleroides Baill. Etud. Gén. Euphorb. (1858) 390.
Mercadoa mandalojonensis Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 463*; F.-Vill. Novis. App. (1880) 193 in syn. sub. *Sumbavia rottleroides* Baill.

Illustrative specimens from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 678*); Rizal Province, Luzon, June, 1915 (*Merrill: Species Blancoanae No. 933*).

MALLOTUS Loureiro

Adelia bernardia Blanco Fl. Filip. (1837) 814, non Linn.=**Adelia barbata** Blanco op. cit. ed. 2 (1845) 561 (sp. nov.); ed. 3, 3 (1879) 223, p. p.=**MALLOTUS RICINOIDES** (Pers.) Muell.-Arg.

Blanco's species was reduced by J. Mueller (Muell.-Arg.) to

Mallotus ricinoides (Pers.) Muell.-Arg., in which he was followed by Fernandez-Villar. As a matter of fact Blanco included at least two species, and his description is for the most part *Mallotus moluccanus* Muell.-Arg.=*Melanolepis multiglandulosa* Reichb. & Zoll. It is to be noted that his description of the leaves as "abroqueladas" is not good, as the leaves are very frequently not peltate, and never more than slightly so in either species mentioned above. The native names cited by him are loosely used, but judging from a large series of specimens of both species examined, *alum* and *arum* properly belong to *Mallotus moluccanus*, and *taquip asin* to *M. ricinoides*. The description of the fruits as "cubierta de barbas muy gruesas, y llenas de borro" applies unmistakably to *Mallotus ricinoides*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 474*).

Adelia resinosa Blanco Fl. Filip. ed. 2 (1845) 562 (sp. nov.); ed. 3, **3** (1879) 225, excl. descr. fl.=**MALLOTUS RESINOSUS** (Blanco) comb. nov. [*Claoxylon muricatum* Wight Ic. Pl. Ind. Or. (1852) *t. 1886; Mallotus muricatus* **Muell.-Arg. in Linnaea 34** (1865) 191].

Blanco's description, with the exception of the details of the staminate flowers, applies absolutely to this species, and it is the only Philippine plant known to me that agrees at all with his description; moreover the species is very common and widely distributed in the Archipelago at low and medium altitudes and is found in all the provinces near Manila from which Blanco secured most of his material. The one character mentioned by Blanco, that I have not observed, is in his description of the male flowers: "pero hay unos cuerpecillos que pasan de diez, mesclados con las estambres, y más cortos que ellos, de figura de pirámide inversa, y coronados con cuatro ó cinco pelos cada uno." It is suspected that he described, at least in part, the staminate flowers of some other genus. In all other characters his description applies, and applies to this species only among all the Philippine *Euphorbiaceae*. The glandular character of the leaves, flowers, etc., is very characteristic. Hooker f., Fl. Brit. Ind. **5** (1887) 437, considers that the Philippine plant, *Cuming 1170*, is different from the true *Croton muricatum* Heyne in Wall. Cat. (1847) No. 7751, *nomen nudum*, and that *Mallotus muricatus* Muell.-Arg. is a mixture. Blanco's species was erroneously reduced by Fernandez-Villar to *Claoxylon wallichianum* **Muell.-Arg.**

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 485*).

Adelia papillaris Blanco Fl. Filip. ed. 2 (1845) 562 (*pappilaris*) (sp. nov.); ed. 3, 3 (1879) 225, *t. 381*=MALLOTUS PAPILLARIS (Blanco) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 238.

Blanco's description is entirely inadequate, consisting only of the following: "*Adelia pappilaris.* Adelia de pezones. Arbolitos dioicos con las cagillas cubiertas no de barbas sino de pezones cortos. Guadalupe." The species is still abundant in dry ravines just across the Pasig River from Guadalupe, a few kilometers from Manila. In taking up Blanco's specific name for the species, l. c., a full description was given by me. It was reduced by Fernandez-Villar to *Mallotus zollingeri* Muell.-Arg., a species that does not occur in the Philippines. Pax & K. Hoffmann reduce it to *Mallotus tiliifolius* (Blume) Muell.-Arg., a disposition of it that I am not prepared to accept although it is manifestly allied to this coastal species. It is of local occurrence at low altitudes in Pampanga, Rizal, and Batangas Provinces, Luzon.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 50*).

Croton volubilis Llanos in Mem. Acad. Cienc. Madr. 4 (1856) 503 (*volubile*) (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 103=MALLOTUS REPANDUS Muell.-Arg.

In this reduction I merely follow Fernandez-Villar who may have seen a specimen of Llanos's species. The original description is as follows: "Croton volubile. Mihi viditur species nova. Fructus (et cocca) magna sunt. Ad. sylv. opp. de Angat. Flores non vidi." If Llanos's species was a *Mallotus*, then it must be either *Mallotus repandus* Muell.-Arg. or *Mallotus floribundus* Muell.-Arg. the only scandent species of the genus in the northern Philippines. *Mallotus floribundus* is unknown from north of Tayabas Province, Luzon, while *M. repandus* is of wide distribution in Luzon and the other large islands of the Archipelago at low and medium altitudes and has been collected in Angat. Llanos may have had specimens of *Omphalea bracteata* (Blanco) Merr.

Illustrative specimen from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 842*).

MELANOLEPIS Reichenbach f. & Zollinger

Adelia monoica Blanco Fl. Filip. ed. 2 (1845) 561 (sp. nov.); ed. 3, 3 (1879) 224, *t. 218*=MELANOLEPIS MULTIGLANDULOSA (Blume) Reichb. & Zoll. (*Mallotus moluccanus* Muell., non *Croton moluccanus* Linn.).

Blanco's description is imperfect and, apparently, in some respects erroneous. There is little doubt, however, but that

this is the plant intended. The description of *Adelia bernardia* Blanco, non Linn.=*A. barbata* Blanco applies in part to *Melanolepis multiglandulosa* but also in part to *Mallotus ricinoides* Muell.-Arg. (see p. 221). The species is common and widely distributed in the Philippines at low altitudes, its most common Tagalog name being *alim* or *alum*. The specific name *moluccana* is invalid for this species. The Linnean species *Croton moluccanus*, on which it was based, is in part *Givotia rottleriformis* Griff., and in part *Aleurites moluccana* Willd.; see Merrill Interpret. Herb. Amb. (1917) 318.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 489*).

ALCHORNEA Swartz

Excoecaria sicca Blanco Fl. Filip. (1837) 787 (sp. nov.); ed. 2 (1845) 542; ed. 3, 3 (1879) 193, *t. 307*=**ALCHORNEA SICCA** (Blanco) Merr. in Philip. Journ. Sci. 5 (1910) Bot. 192 (*A. philippinensis* Pax & Hoffm.!).

Croton drupaceum Blanco Fl. Filip. ed. 2 (1845) 519 (sp. nov.); ed. 3, 3 (1879) 155, non Roxb.=**ALCHORNEA SICCA** (Blanco) Merr.

This species is common in certain localities about Manila, growing in thickets, along streams, etc. J. Mueller, followed by Pax, was quite wrong in referring Blanco's *Excoecaria sicca* to *Homalanthus populneus* as a variety. Fernandez-Villar was equally wrong in referring it to *Alchornea mollis* Muell.-Arg., a species that does not extend to the Philippines. As to *Croton drupaceum* Blanco, this was reduced by Fernandez-Villar to *Croton luzonensis* Muell.-Arg., a species that does not grow in the vicinity of Manila, and one to which Blanco's description does not at all apply. Blanco's specimens were from the banks of the Pasig River opposite Guadalupe, a few kilometers from Manila, known there as *balanti*, the same native name he cites for his *Excoecaria sicca*. The specific name is a misnomer, and he does not describe the fruit as a drupe: "Drupa globosa, poco carnosa, que se divide en tres pedazos (y por tanto tricoca) y en cada uno una semilla huesosa." His description manifestly applies to *Alchornea sicca*, and the species is still common along the Pasig River opposite Guadalupe and is still generally known to the residents there as *balanti*. Pax & K. Hoffman are entirely wrong in citing as a synonym of this species, *Alchornea parviflora* Muell.-Arg. The form they have described as *Alchornea philippinensis* is typical *Alchornea sicca* (Blanco) Merr.

Illustrative specimen from the banks of the Pasig River

opposite Guadalupe, Rizal Province, Luzon, April, 1914, (*Merrill: Species Blancoanae No. 642*).

Adelia glandulosa Blanco Fl. Filip. (1837) 814 (sp. nov.)=**ALCHORNEA RUGOSA** (Lour.) Muell.-Arg. (*A. javensis* Muell.-Arg.).

Tragia innocua Blanco Fl. Filip. ed. 2 (1845) 479; ed. 3, 3 (1879) 94, non Linn.=**ALCHORNEA RUGOSA** (Lour.) Muell.-Arg.

Adelia glandulosa Blanco is not included in the second or in the third edition of the Flora de Filipinas, but in the Novissima Appendix it is reduced by Fernandez-Villar to *Alchornea javensis* Muell.-Arg.=*A. rugosa* Muell.-Arg. The entire description consists of a single line: "Hojas con cuatro glandulas en la parte superior," with the additional statement that it is a shrub from Santa Maria, Ilocos, the leaves being used as a remedy for rheumatism. Correspondence sent to the municipal authorities of Santa Maria regarding this plant elicited no answer. *Alchornea rugosa* is common and widely distributed at low and medium altitudes in the Philippines, and the correctness of Fernandez-Villar's reduction of Blanco's *Adelia glandulosa* is at least reasonably certain. Blanco's description of *Tragia innocua* conforms absolutely with Mueller's species, which he otherwise described as *Adelia glandulosa*. Fernandez-Villar was wrong in reducing it to *Alchornea villosa* Muell.-Arg., a species that does not extend to the Philippines.

Illustrative specimen from Montalban, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 725*).

CLEIDION Blume

Niota ? globosa Blanco Fl. Filip. ed. 2 (1845) 214 (sp. nov.); ed. 3, 2 (1878) 35=**CLEIDION SPICIFLORUM** (Burm. f.) Merr. Interpret. Herb. Amb. (1917) 322 (*C. javanicum* Blume).

Blanco's species was reduced by Fernandez-Villar to *Claoxylon indicum* Hassk., but the description does not apply at all to Hasskarl's species. The description was based on a fruiting specimen only and is very imperfect; it agrees in all respects with *Cleidion spiciflorum* Merr. except that the petioles are not all "cortos," some being decidedly elongated, while others are short. The leaf characters, size and characters of the fruit, solitary long peduncled flowers (i. e. fruits) given by Blanco are characters of *Cleidion spiciflorum* Merr.; moreover, the species is common and widely distributed in the Philippines at low and medium altitudes, and is found in abundance in all the provinces near Manila from which Blanco received his material.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 532*).

MACARANGA Thouars

Croton grandifolius Blanco Fl. Filip. (1837) 753 (sp. nov.); ed. 2 (1845) 518; ed. 3, 3 (1879) 153=**MACARANGA GRANDIFOLIA** (Blanco) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 394.

Blanco's species was reduced by J. Mueller to *Macaranga mappa* (Linn.) Muell.-Arg., and *M. mappa* was credited to the Philippines on this reduction of Blanco's *Croton grandifolius*. *Macaranga porteana* E. André, based on Philippine material, is a synonym of *M. grandifolia* (Blanco) Merr. The species is common in parts of Luzon, more specially in the provinces near Manila, growing in thickets at low altitudes. Its common Tagalog name is *bingabing*. Pax & K. Hoffmann are entirely wrong in reducing this to *Macaranga mappa* (Linn.) Muell.-Arg., which is an Amboina species belonging in a different section of the genus; see Merrill Interpret. Herb. Amb. (1917) 319.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 651*).

Croton lacciferum Blanco Fl. Filip. (1837) 752 (sp. nov.); ed. 2 (1845) 517; ed. 3, 3 (1879) 153=**MACARANGA TANARIUS** (Linn.) Muell.-Arg. var. **TOMENTOSA** Muell.-Arg.

This species is common and widely distributed at low and medium altitudes in the Philippines, a characteristic shrub or tree of thickets, second-growth forests, deserted clearings, etc.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *binonga* (*Merrill: Species Blancoanae No. 611*).

ACALYPHA Linnaeus

Acalypha caroliniana Blanco Fl. Filip. (1837) 748; ed. 2 (1845) 515; ed. 3, 3 (1879) 149, *t. 266*, non Walt.=**ACALYPHA INDICA** Linn.

This species is common and widely distributed in and about towns in the Philippines at low and medium altitudes; it is certainly an introduced weed in the Archipelago.

Illustrative specimen from Guadalupe, Rizal Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 487*).

Acalypha glandulosa Blanco Fl. Filip. (1837) 749; ed. 2 (1845) 516; ed. 3, 3 (1879) 149, non Cav.=**ACALYPHA AMENTACEA** Roxb. (*A. stipulacea* Klotz.).

This species is common and widely distributed in the Philippines at low altitudes, the type of *Acalypha stipulacea* Klotz. being from Rizal Province, Luzon. It is exceedingly variable in vegetative characters, the petioles long or short, the leaves with

or without glands or gland-like projections at the base; see Merrill Interpret. Herb. Amb. (1917) 322.

Illustrative specimen from Samar, May, 1914 (*Merrill: Species Blancoanae No. 20*).

ACALYPHA ANGATENSIS Blanco Fl. Filip. (1837) 750 (sp. nov.); ed. 2 (1845) 516; ed. 3, 3 (1879) 150.

Acalypha tomentosa Blanco Fl. Filip. (1837) 750 (sp. nov.); ed. 3, 3 (1879) 151=**ACALYPHA ANGATENSIS** Blanco.

There is no doubt that the two species described by Blanco are identical, but the former has page priority. *Acalypha tomentosa* was excluded by him in the second edition of the "Flora de Filipinas," but included by Naves and Villar in the third. In the original description Blanco observes "Se distinguen poco entre si [*A. angatensis* and *A. tomentosa*] estos dos arboles." *Acalypha angatensis* Blanco is, I consider, referable to the form that has been described as *Acalypha grandis* Benth. var. *velutina* Muell.-Arg., but this being so Blanco's specific name is much older than *Acalypha grandis* Benth. or any of its synonyms. Fernandez-Villar retained *Acalypha angatensis* as a distinct species, and Mueller considers it under his section *Euacalypha, Pleurostachyae, Hypandrae* [de Candolle Prodromus 15² (1866) 805]. Blanco described *Acalypha angatensis* as having short petioles and in having monoecious flowers, the staminate ones above the pistillate ones in the same spike. This is not true of normal *Acalypha grandis*, which is usually dioecious. However, some of our material (*Elmer 5727*) agrees with Blanco's description in the short petioles and in the disposition of the flowers, and I am not able to distinguish this specimen specifically from *Acalypha grandis* var. *velutina* or from *A. angatensis* Blanco. In the rather abundant duplicate material collected in Angat and destined for issue to illustrate Blanco's species, many of the specimens present only male, or only female flowers; about six specimens present male flowers and female flowers in different inflorescence on the same branches, and one specimen presents the male flowers in the same spike with the female ones and above the latter as Blanco describes the species.

Illustrative material from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 333*).

RICINUS Linnaeus

RICINUS COMMUNIS Linn.; Blanco Fl. Filip. (1837) 761; ed. 2 (1845) 523; ed. 3, 3 (1879) 161.

The Linnean species was correctly interpreted by Blanco. Common and widely distributed in waste places in and about

towns throughout the Philippines; of prehistoric introduction into the Archipelago.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 624*).

HOMONOIA Loureiro

Lumanaja fluviatilis Blanco Fl. Filip. (1837) 821 (gen. et sp. nov.); ed. 2 (1845) 568; ed. 3, 3 (1879) 236, *t. 338*=**HOMONOIA RIPARIA** Lour.

This was proposed by Blanco as a new genus and species, the generic appellation being derived from its Tagalog name *lumanay*. It is found along the rocky beds of swift streams in all parts of the Archipelago.

Illustrative specimen from Bataan Province, Luzon (*Merrill: Species Blancoanae No. 343*).

ALEURITES Forster

ALEURITES TRISPERMA Blanco Fl. Filip. (1837) 755 (sp. nov.)= **Aleurites saponaria** Blanco op. cit. ed. 2 (1845) 519 (nom. nov.); ed. 3, 3 (1879) 156, *t. 296*.

This species is widely distributed in the Philippines at low and medium altitudes, but is apparently nowhere abundant. It occurs from Luzon to Mindanao, both in the forest and in and about towns as a cultivated tree. The oil yielded by the seeds has powerful drying properties and is somewhat caustic, causing eruptions when applied to the skin. It is commonly known as *balocanad, baguilumbang*, etc.

Illustrative specimen from Maragondong, Cavite Province, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 145*).

Aleurites lobata Blanco Fl. Filip. (1837) 756 (sp. nov.)=**Aleurites triloba** Forst.; Blanco op. cit. ed. 2 (1845) 520; ed. 3, 3 (1879) 157, *t. 220*= **ALEURITES MOLUCCANA** (Linn.) Willd.

Aleurites lanceolata Blanco op. cit. 757 (sp. nov.); 521; 157=**ALEURITES MOLUCCANA** (Linn.) Willd.

This species is common and widely distributed in the Philippines at low and medium altitudes and certainly has been purposely distributed from one island to another in the Archipelago, perhaps even purposely introduced into the Archipelago. It is commonly known as *lumbang* in the Tagalog provinces and as *biao* in the Visayan islands. *Aleurites lanceolata* Blanco is merely a form with narrow, entire leaves and is manifestly specifically identical with *A. lobata* Blanco which in turn is identical with *A. triloba* Forst. and *A. moluccana* (Linn.) Willd.; the latter is the oldest specific name, dating from 1753.

Illustrative specimen from Maragondong, Cavite Province, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 127*).

JATROPHA Linnaeus

Jatropha janipha Blanco Fl. Filip. (1837) 758; ed. 2 (1845) 521; ed. 3, 3 (1879) 159, *t. 342* non Linn.=**JATROPHA MULTIFIDA** Linn.

This species is occasionally cultivated in the Philippines and usually is known to the natives as *maná*, the name apparently introduced with the plant from tropical America.

Illustrative specimen from Manila, Luzon, April, 1914, *comm. L. J. Reyes* (*Merrill: Species Blancoanae No. 625*).

JATROPHA CURCAS Linn.; Blanco Fl. Filip. (1837) 759; ed. 2 (1845) 522; ed. 3, 3 (1879) 160, *t. 384.*

The Linnean species was correctly interpreted by Blanco. It was introduced from Mexico at an early date by the Spaniards, but is now widely distributed in the Philippines, cultivated and naturalized.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 10*).

MANIHOT Adanson

Jatropha manihot Linn.; Blanco Fl. Filip. (1837) 760; ed. 2 (1845) 522; ed. 3, 3 (1879) 160=**MANIHOT UTILISSIMA** Pohl.

This species was introduced into the Philippines by the Spaniards at an early date and is now found in general cultivation throughout the Archipelago. Its common Tagalog name is *camoting cahoy* (*camoting* from *camote*=*Ipomoea batatas* Poir., and *cahoy*=tree). It is not uncommon about Manila but here very rarely producing flowers or fruit, although in many parts of the provinces it flowers regularly.

Illustrative specimen from Manila, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 832*).

CODIAEUM Blume

Croton variegatus Linn.; Blanco Fl. Filip. (1837) 751; ed. 2 (1845) 517; ed. 3, 3 (1879) 152, *t. 390*=**CODIAEUM VARIEGATUM** (Linn.) Blume.

The Linnean species was correctly interpreted by Blanco. This enormously variable species is very generally cultivated throughout the Philippines for ornamental purposes, a large number of forms, both as to shape and color of the leaves, being found. None of the forms, however, is native to the Archipelago, and they are never found wild. *No. 1062*, cited below, is the particular form that Blanco described. Dr. Leon Ma. Guerrero informs me that this was the only form found in Manila gardens up to about the year 1880.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae Nos. 772, 1062*).

OMPHALEA Linnaeus

Tragia bracteata Blanco Fl. Filip. ed. 2 (1845) 480 (sp. nov.); ed. 3, 3 (1879) 94=**OMPHALEA BRACTEATA** (Blanco) comb. nov. (*Omphalea philippinensis* Merr.).

Blanco's species was erroneously reduced by Fernandez-Villar to *Pimeleodendron amboinicum* Hassk., with which Blanco's description does not conform in any particular; no representative of *Pimeleodendron* is known from the Philippines. The description of *Tragia bracteata* Blanco conforms very closely with the characters of *Omphalea philippinensis* Merr., and I have no hesitation in substituting Blanco's specific name for the one I proposed for this form.

Illustrative specimen from Rizal Province, Luzon, August, 1917 (*Merrill: Species Blancoanae No. 1061*).

EXCOECARIA Linnaeus

EXCOECARIA AGALLOCHA Linn.; Blanco Fl. Filip. (1837) 786; ed. 2 (1845) 541; ed. 3, 3 (1879) 193.

The Linnean species was correctly interpreted by Blanco. It is common along the seashore throughout the Philippines.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 96*).

HOMALANTHUS Jussieu

Excoecaria laevis Blanco Fl. Filip. (1837) 788 (sp. nov.); ed. 2 (1845) 543; ed. 3, 3 (1879) 194=**HOMALANTHUS POPULNEUS** (Geisel.) Pax, var. **LAEVIS** (Blanco) Merr. comb. nov. [*Homalanthus populneus* (Geisel.) Pax, var. *siccus* Pax (non *Excoecaria sicca* Blanco); *Carumbium populneum* var. *minus* Muell.-Arg. in DC. Prodr. 15² (1866) 1145].

This species is common and widely distributed in the Philippines at low and medium altitudes. It is one of the characteristic plants appearing in recently cleared areas that are allowed to revert from cultivation. Blanco's specific name is here adopted as the varietal one as it is older than the varietal name proposed by J. Mueller, while Pax was entirely wrong in adopting the varietal name *siccus* from Blanco's *Excoecaria sicca*, as *Excoecaria sicca* Blanco is *Alchornea sicca* (Blanco) Merr., not at all *Homalanthus;* see page 224.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 75*).

EUPHORBIA Linnaeus

Euphorbia dulcis Blanco Fl. Filip. (1837) 412; ed. 2 (1845) 287; ed. 3, 2 (1878) 167, non Linn.=**EUPHORBIA ATOTO** Forst.

This form is common along sandy seashores in the Phil-

ippines. Fernandez-Villar reduced it to *Euphorbia laevigata* Vahl, a synonym of *E. atoto* Forst.

Illustrative specimens from Pasaquin, Ilocos Norte Province, Luzon, and from Punta de Azufre, Batangas Province, Luzon, October and November, 1916 (*Merrill: Species Blancoanae Nos. 997, 1040*).

Euphorbia parannaquensis Blanco Fl. Filip. ed. 2 (1845) 286 (sp. nov.); ed. 3, 2 (1878) 165=**EUPHORBIA SERRULATA** Reinw.

Blanco's specimens were from the town of Parañaque immediately south of Manila, and Fernandez-Villar was correct in reducing it to Reinwardt's species. It is widely distributed in the Philippines at low and medium altitudes, occurring in fallow lands and in open grasslands at low and medium altitudes.

Illustrative specimen (a topotype) from Parañaque, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 510*).

Euphorbia capitata Lam.; Blanco Fl. Filip. (1837) 411=**EUPHORBIA HIRTA** Linn.; Blanco op. cit. ed. 2 (1845) 286; ed. 3, 2 (1878) 166.

Blanco correctly interpreted Lamarck's species and in the second edition correctly reduced it to the Linnean one. The species is more commonly known as *Euphorbia pilulifera* Linn., but this is a synonym of *Euphorbia hirta* Linn., the latter having page priority. It is very common and widely distributed at low altitudes in the settled areas of the Philippines; certainly an introduced weed.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 549*).

Euphorbia pentagona Blanco Fl. Filip. (1837) 413; ed. 2 (1845) 287; ed. 3, 2 (1878) 168, non Haw.=**EUPHORBIA NERIIFOLIA** Linn.

This species is occasionally found in cultivation, but is not a native of the Philippines. The trunk and larger branches are terete, the younger branchlets stout and 5-angled, the angles much more prominent in dried than in living material. Its common Tagalog name is *soro-soro* or *sorog-sorog*.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 823*).

EUPHORBIA TIRUCALLI Linn.; Blanco Fl. Filip. (1837) 412 (*tiraculli*); ed. 2 (1845) 287; ed. 3, 2 (1878) 167, *t. 210*.

The Linnean species was correctly interpreted by Blanco. It is locally abundant in some towns in the Philippines and is widely distributed in the Archipelago; certainly a purposely introduced plant. In fifteen years residence in the Philippines

I have never seen this species in flower, and Blanco notes that he never saw the flowers. It is very generally known by the Spanish name *consuelda*, or various corruptions or modifications of it such as *suerda*, *consuerda*, etc.

Illustrative specimen from Malabon, Rizal Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 520*).

ANACARDIACEAE

BUCHANANIA Sprengel

Fagara decandra Blanco Fl. Filip. (1837) 66 (sp. nov.); ed. 2 (1845) 48; ed. 3, 1 (1877) 89, *t. 63*=**BUCHANANIA ARBORESCENS** Blume (*B. florida* Schauer, var. *arborea* Engl.).

This species is common and very widely distributed in the Philippines, being universally known as *balinhasay*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae Nos. 321, 712*).

MANGIFERA Linnaeus

MANGIFERA ALTISSIMA Blanco Fl. Filip. (1837) 181 (*altisima*) (sp. nov.); ed. 2 (1845) 129; ed. 3, 1 (1877) 230.

This species is apparently a valid one, but was erroneously reduced by Fernandez-Villar to *Mangifera longipes* Griff., a species unknown from the Philippines. It is very generally known as *pajo* or *pahutan*. Pahutan="pajo" (mango) and "utan" (wild), literally "wild mango." It is of wide distribution in the northern and central parts of the Archipelago at low and medium altitudes; a sylvan species.

Illustrative specimen from Angat, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 831*).

MANGIFERA INDICA Linn.; Blanco Fl. Filip. (1837) 179; ed. 2 (1845) 127; ed. 3, 1 (1877) 229.

Mangifera rostrata Blanco op. cit. ed. 2 (1845) 129 (sp. nov.); ed. 3, 1 (1877) 231, *t. 62*=**MANGIFERA INDICA** Linn.

Mangifera anisodora Blanco op. cit. ed. 2 (1845) 129 (sp. nov.); ed. 3, 1 (1877) 229=**MANGIFERA INDICA** Linn.

Mangifera indica Linn. was correctly interpreted by Blanco while *M. rostrata* Blanco and *M. anisodora* Blanco are certainly specifically identical with the Linnean species. *Mangifera rostrata* Blanco is a form with a somewhat compressed fruit, distinctly narrowed towards the apex, and is widely known in Luzon as *manga pico*. *Mangifera anisodora* Blanco was described by Blanco without his having seen specimens and is manifestly a form of *M. indica* L. with fruits more fragrant than the common type. *Mangifera indica* L. was undoubtedly introduced into the Philippines by the Spaniards.

Illustrative specimen from Manila, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 2*).

ANACARDIUM Linnaeus

Cassuvium reniforme Blanco Fl. Filip. (1837) 322 (sp. nov.); ed. 2 (1845) 227; ed. 3, 2 (1878) 60, *t. 116*=**ANACARDIUM OCCIDENTALE** Linn.

The cashew tree was introduced from Mexico at an early date in colonial history through the Acapulco-Manila galleons and is now cultivated, and in some localities at least subspontaneous, throughout the Philippines in the settled areas at low and medium altitudes. It is universally known as *casoy*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 411*).

SPONDIAS Linnaeus

Spondias dulcis Blanco Fl. Filip. (1837) 390; ed. 2 (1845) 273; ed. 3, 2 (1878) 143, *t. 132*, non Forst.=**SPONDIAS PURPUREA** Linn.

This species is common in cultivation in many parts of the Philippines, being especially abundant in the region immediately south of Manila. It is commonly known as *sirihuelas* (corruption of Spanish *ciruela*=plum). Blanco's species was reduced by Fernandez-Villar to *Spondias purpurea* Linn., which I previously thought to be erroneous and referred *S. dulcis* Blanco to *S. lutea* Linn.; see Govt. Lab. Publ. 27 (1905) 36; I now consider Fernandez-Villar's reduction to be the correct one. *Spondias lutea* Linn. does not occur in the Philippines unless as a species introduced within the past few years. *S. purpurea* Linn. must have been introduced into the Philippines from Mexico at an early date. In and about Manila it is entirely deciduous in the dry season, flowering in March, the leaves appearing immediately after anthesis.

Illustrative specimen from Pasay, Rizal Province, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 639*).

Poupartia pinnata Blanco Fl. Filip. (1837) 392 (sp. nov.); ed. 2 (1845) 274; ed. 3, 2 (1878) 146=**SPONDIAS PINNATA** (Linn. f.) Kurz (*S. mangifera* Blume).

This sylvan species is widely distributed in the Philippines; it is rarely cultivated for its edible fruits. Blanco was wrong in applying the Tagalog name *dao* to this species, which properly belongs to his *Paliurus dao*=*Dracontomelum dao* Merr. and Rolfe. The almost universal native name for *Spondias pinnata* in the Philippines is *libas*.

Illustrative specimen from Laguna Province, Luzon, February, 1913 (*Merrill: Species Blancoanae No. 314*).

DRACONTOMELUM Blume

Paliurus dao Blanco Fl. Filip. (1837) 174 (sp. nov.); ed. 2 (1845) 122; ed. 3, 1 (1877) 219=**DRACONTOMELUM DAO** (Blanco) Merr. & Rolfe in Philip. Journ. Sci. 3 (1908) Bot. 108.

This species is common and of very wide distribution in the Philippines and is universally known as *dao* in most parts of the Archipelago. It is closely allied to the Malayan *Dracontomelum mangiferum* Blume.

Illustrative specimen from Butuan Subprovince, Mindanao, August, 1913 (*Merrill: Species Blancoanae No. 316*).

Paliurus edulis Blanco Fl. Filip. (1837) 173 (sp. nov.)=**Paliurus lamiyo** Blanco op. cit. ed. 2 (1845) 122 (nom. nov.) ed. 3, 1 (1877) 218 p. p.= **DRACONTOMELUM LAMIYO** (Blanco) comb. nov. (*D. cumingianum* Baill.).

The species Blanco described is a mixture, although there is little doubt as to what he intended. His description of the flowers is that of a species of *Canarium*, and undoubtedly also the leaves belong with the *Canarium* for the description "hojas * * * lampiñas. Peciolo * * * con dos puas largas, colocadas arriba, y lejos de la base" applies to *Canarium*, certainly not to *Dracontomelum cumingianum* Baill. Blanco's description of the fruit is good for that of Baillon's species; and the name *lamiyo* is the almost universal Tagalog one for this species and is applied to no other so far as I know. The specific name *edulis* is invalidated in *Dracontomelum* by *D. edule* Merr. It is widely distributed in forests of the Philippines at low altitudes.

Illustrative specimen from Samar, April, 1915 (*Merrill: Species Blancoanae No. 19*).

KOORDERSIODENDRON Engler

Helicteres pinnata Blanco Fl. Filip. (1837) 384 (sp. nov.)=**Cyrtocarpa quinquestyla** Blanco op. cit. ed. 2 (1845) 269 (*quinquestila*) (nom. nov.); ed. 3, 2 (1878) 135=**KOORDERSIODENDRON PINNATUM** (Blanco) Merr. in Forest. Bureau (Philip.) Bull. 1 (1903) 33 (*K. celebicum* Engl.).

This sylvan species is widely distributed in the Philippines at low and medium altitudes and is universally and exclusively known in the Tagalog provinces as *amoguis*, this being also the commercial name of its timber. It was erroneously reduced by Fernandez-Villar to *Odina speciosa* Blume, a genus and species unknown from the Philippines. For a detailed figure of the species see Boerlage in Icon. Bogor. 1 (1901) 55, *t. 94–96* (as *K. celebicum* Engl.).

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 744*).

SEMECARPUS Linnaeus f.

SEMECARPUS CUNEIFORMIS Blanco Fl. Filip. (1837) 220 (sp. nov.); ed. 2 (1845) 155; ed. 3, 1 (1877) 276, *t. 75*.

Semecarpus anacardium Blanco op. cit. 216; 152; 275, non Linn. f.=**SEMECARPUS CUNEIFORMIS** Blanco (*S. perrottetii* March.).

This species is common and widely distributed in the Philippines and is especially abundant about Manila. There is no reason to consider that Blanco's *Semecarpus anacardium* is other than a mere form of his *S. cuneiformis*. Both are manifestly the same as the species later described, from specimens collected in Manila, as *Semecarpus perrottetii* March.; see Merrill in Philip. Journ. Sci. 7 (1912) Bot. 289. The species is commonly known as *ligas* (Tagalog), and to many persons it is a violent contact poison, the symptoms of poisoning being the same as those caused by *Rhus toxicodendron* Linn.

Illustrative specimen from Manila, Luzon, February, 1913 (*Merrill: Species Blancoanae No. 283*).

CELASTRACEAE

CELASTRUS Linnaeus

DIOSMA SERRATA Blanco Fl. Filip. (1837) 168 (sp. nov.); ed. 2 (1845) 119; ed. 3, 1 (1877) 213=**CELASTRUS PANICULATA** Willd. (*C. polybotrys* Turcz.).

This species is common and widely distributed in the Philippines, and Blanco's description agrees entirely with Willdenow's species to which it was reduced by Fernandez-Villar.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 346*).

GYMNOSPORIA Wight & Arnott

Cupania spinosa Blanco Fl. Filip. (1837) 184 (sp. nov.); ed. 2 (1845) 204; ed. 3, 2 (1878) 17=**GYMNOSPORIA SPINOSA** (Blanco) Merr. & Rolfe in Philip. Journ. Sci. 3 (1908) Bot. 109 (*G. montana* F.-Vill., non Roxb.).

This species is common and widely distributed in the Philippines and presents considerable variation in its vegetative characters; that is, in size and shape of its leaves. The spines are never very prominent.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 349*).

HIPPOCRATEACEAE

HIPPOCRATEA Linnaeus

Hippocratea volubilis Blanco Fl. Filip. (1837) 27 (sp. nov.); ed. 2 (1845) 20; ed. 3, 1 (1877) 37, non aliorum=? **HIPPOCRATEA INDICA** Willd.

Blanco's description is apparently that of a *Hippocratea,* but does not apply to *H. indica* Willd., nor to *H. obtusifolia* Roxb., to which it was reduced by Fernandez-Villar. His statement that the flowers are in axillary and terminal racemes and that the fruits are obliquely obcordate does not apply to *Hippocratea indica* Willd. nor to any other species known to me at the present time. Blanco's specific name is invalid, so that the exact status of the species is unimportant.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 71*).

SALACIA Linnaeus

Salacia sinensis Blanco Fl. Filip. (1837) 26; ed. 2 (1845) 19; ed. 3, 1 (1877) 36, *t. 86,* non Gmel.=**SALACIA PRINOIDES** (Willd.) DC.

Comocladia serrata Blanco Fl. Filip. (1837) 30 (sp. nov.)=**SALACIA PRINOIDES** (Willd.) DC.

There is no doubt whatever but that the plant Blanco described as *Salacia sinensis* is a *Salacia,* but the medicinal properties he ascribed to it apparently belong with *Siphonodon celastrineus* Griff.; this may account for Blanco's description of the plant as an "arbolito," rather than as a scandent shrub which it really is. *Comocladia serrata* was reduced by Fernandez-Villar to *Salacia oblonga* Wall., which is correct as to the genus but certainly wrong as to the species, for *Salacia oblonga* Wall. is not known to extend to the Philippines. The species is not included in the second or in the third edition of the Flora de Filipinas. From the data given by Blanco I have no hesitation in reducing the species to *Salacia prinoides* DC., as that species is currently interpreted.

Illustrative specimen from Malampaya Bay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 371*).

SPECIES OF DOUBTFUL STATUS

Salacia triplinervis Llanos in Mem. Acad. Cienc. Madr. 2 (1859) 500 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4^1 (1880) 101.

There is no description and hence the status of the species is indeterminable. Fernandez-Villar reduced it to *Connarus monocarpus* Linn., but there is no justification of this, as the Linnean species does not occur in the Philippines.

ICACINACEAE

URANDRA Thwaites

Elaeocarpus ? integrifolius Blanco Fl. Filip. ed. 2 (1845) 306; ed. 3, 2 (1878) 202, non Lam.=**URANDRA LUZONIENSIS** Merr.

Blanco's description is short and imperfect, but is sufficiently definite to indicate that an icacinaceous plant is intended. Fernandez-Villar erroneously reduced it to *Chailletia gelonioides* Hook. f., a species that does not extend to the Philippines and one to which Blanco's description does not apply. The only species known to me that at all conforms to his description is *Urandra luzoniensis* Merr., which is common in the provinces near Manila and has the same flowering period as Blanco indicates for *Elaeocarpus integrifolius*. The name *birlag* cited by Blanco, does not appear on any of our material.

Illustrative specimen from Burgos, Ilocos Norte Province, Luzon, March, 1917 (*Merrill: Species Blancoanae No. 671*).

PHYTOCRENE Wallich

Kadsura blancoi Azaola in Blanco Fl. Filip. ed. 2 (1845) 594 (sp. nov.); ed. 3, 3 (1879) 118=**PHYTOCRENE BLANCOI** (Azaola) Merr. (*P. luzoniensis* Baill.).

This species is of rather wide distribution in the Philippines at low and medium altitudes, but is not abundant. It was erroneously reduced by Fernandez-Villar to *Schizandra elongata* Hook. f. & Th. Azaola's description was based on a fruiting specimen; see Merrill in Philip. Journ. Sci. **2** (1907) Bot. 432.

Illustrative specimen from Montalban, Rizal Province, Luzon, February, 1914 (*Merrill: Species Blancoanae No. 417*).

SAPINDACEAE

CARDIOSPERMUM Linnaeus

CARDIOSPERMUM HALICACABUM Linn.; Blanco Fl. Filip. (1837) 312; ed. 2 (1845) 218; ed. 3, 2 (1878) 44.

The Philippine material and the form described by Blanco are referable to the variety *microcarpum* Blume. Throughout the Philippines in and about towns; certainly an introduced plant.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 264*).

ALLOPHYLUS Linnaeus

Aporetica penicellata Blanco Fl. Filip. (1837) 291 (sp. nov.); ed. 2 (1845) 203; ed. 3, 2 (1878) 15 (*penicillata*)=**ALLOPHYLUS TERNATUS** (Forst.) Radlk.

Blanco's species was reduced by Fernandez-Villar to *Allophylus cobbe* (L.) Blume, forma *villosus* Laws., which was correct

as to the genus, but wrong as to the species; *Allophylus cobbe* Blume does not extend to the Philippines. *Aporetica penicellata* Blanco is unquestionably identical with *Allophylus ternatus* (Forst.) Radlk., a common species found near the seashore throughout the Philippines.

Illustrative specimens from Lamao, Bataan Province, Luzon, December, 1915; and from Tayabas Province, Luzon, October, 1916 (*Merrill: Species Blancoanae Nos. 962, 1028*).

Aporetica ternata Blanco Fl. Filip. (1837) 290, non Forst.=**Aporetica gemella** Blanco op. cit. ed. 2 (1845) 203; ed. 3, 2 (1878) 15, non DC.= **ALLOPHYLUS TIMORENSIS** Blume.

Fernandez-Villar reduced this to *Allophylus cobbe* Blume, which is certainly a wrong disposition of it. I previously thought that it was the same as *Allophylus grossedentatus* (Turcz.) Radlk., and so placed it, but Blanco's description does not conform to this endemic species, but does agree closely with the characters of the widely distributed *Allophylus timorensis* Blume, and I am satisfied that this is the correct disposition of it.

SAPINDUS Linnaeus

Quassia tricarpa Blanco Fl. Filip. (1837) 351 (sp. nov.); ed. 2 (1845) 206; ed. 3, 2 (1878) 94; *t. 388*, pro majore parte,=**SAPINDUS SAPONARIA** Linn. forma **MICROCARPA** Radlk. (*Sapindus turczaninowii* Vid.).

This is undoubtedly the species intended by Blanco, but his description is manifestly based on two different plants. It was reduced by Fernandez-Villar to *Cupania pleuropteris* Blume= *Guioa pleuropteris* Radlk., which is manifestly incorrect, although Blanco's description in part apparently applies to a species of *Guioa*, and probably *Guioa koelreuteria* (Blanco) Merr. [*G. perrottetii* (Blume) Radlk.]. Radlkofer was certainly correct in reducing the species to *Sapindus saponaria* Linn., for Blanco's description and the notes following the description apply to this species. It is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914, there known as *tiquis-tiquis* (*Merrill: Species Blancoanae No. 183*).

ERIOGLOSSUM Blume

Sapindus edulis Blanco Fl. Filip. ed. 2 (1845) 201 (sp. nov.); ed. 3, 2 (1878) 12, non Ait.=**ERIOGLOSSUM EDULE** (Linn.) Blume (*E. rubiginosum* Blume).

This species is common and widely distributed in the Philippines. Blanco described his *Sapindus edulis* as a new species

independent of Blume's earlier consideration of the same species under the same name.

Illustrative specimens from Taytay, Palawan, May, 1913 and from Batangas Province, Luzon, April, 1915 (*Merrill: Species Blancoanae Nos. 320, 1042*).

OTOPHORA Blume

Sapindus baccatus Blanco Fl. Filip. (1837) 290 (sp. nov.) = **Koelreuteria edulis** Blanco op. cit. ed. 2 (1845) 202 (nom. nov.); ed. 3, 2 (1878) 14, *t. 110* = **OTOPHORA FRUTICOSA** Blume.

Capura pinnata Blanco Fl. Filip. (1837) 264 (sp. nov.) = **Capura purpurata** Blanco op. cit. ed. 2 (1845) 184 (nom. nov.); ed. 3, 1 (1877) 328 = **OTOPHORA FRUTICOSA** Blume (*Otophora nigrescens* F.-Vill., *Otolepis nigrescens* Turcz., *Sapindus arborescens* Llanos, non Spreng., *Otophora paucijuga* F.-Vill., non Hiern, *Otophora pinnata* Merr.).

Sapindus baccatus Blanco (*Koelreuteria edulis* Blanco, *Otophora blancoi* Blume) is certainly identical with *Otophora fruticosa* Blume, for Blanco's description unmistakably applies to Blume's species. The identity of *Capura pinnata* Blanco (*Capura purpurata* Blanco) with *Otophora fruticosa* Blume, while reasonably sure, is not as certain as the preceding, unless Blanco erred in certain observations. *Otophora fruticosa* Blume is of very wide distribution in the Philippines and is abundant in many regions.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 374*).

TRISTIRA Radlkofer

Melicocca triptera Blanco Fl. Filip. ed. 2 (1845) 203 (sp. nov.); ed. 3, 2 (1878) 16 = **TRISTIRA TRIPTERA** (Blanco) Radlk. (*Zollingeria triptera* Rolfe).

Blanco's specimens were from Parañaque, Rizal Province, Luzon, a town immediately south of Manila, but the species has long since been exterminated in this vicinity. The species was interpreted by Radlkofer from *Cuming 1857*, from the Island of Bohol, in the southern part of the Philippines, several hundred miles south of Manila, and an island from which Blanco had no material. The specimens distributed herewith absolutely represent Blanco's species, and even if specifically distinct from Cuming's specimens, should be taken to typify *Tristira triptera* (Blanco) Radlk.; not having specimens of Cuming's plant for comparison, the question of identity cannot be determined at this writing.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 539*).

EUPHORIA Commerson

EUPHORIA DIDYMA Blanco Fl. Filip. (1837) 288 (sp. nov.); ed. 2 (1845) 201; ed. 3, 2 (1878) 10 [*E. cinerea* (Turcz.) Radlk.].

Euphoria litchi Blanco Fl. Filip. (1837) 285; ed. 2 (1845) 199; ed. 3, 2 (1878) 8, non Juss.=**EUPHORIA DIDYMA** Blanco [*E. cinerea* (Turcz.) Radlk.].

Euphoria didyma Blanco was erroneously reduced by Fernandez-Villar to *Nephelium glabrum* Noronha, and *E. litchi* Blanco to *Nephelium longana* Camb.; the former does not occur in the Philippines, while the latter is very rarely cultivated. Both descriptions manifestly apply to the same species, and both to the form commonly known as *Euphoria cinerea* (Turcz.) Radlk., which is very widely distributed in the Archipelago. In some regions this is very generally known as *guisihan*, but by far its most common native name is *alupag*.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, there known as *alpay* (*Merrill: Species Blancoanae No. 745*).

Euphoria annularis Blanco Fl. Filip. (1837) 285 (sp. nov.); ed. 2 (1845) 199; ed. 3, 2 (1878) 7=? **EUPHORIA DIDYMA** Blanco.

I am not at all certain as to the correct status of this species, except that it is probably a *Euphoria*, and if so, then almost certainly the same as *E. didyma* Blanco (*E. cinerea* Radlk.). The description, in some respects, strongly suggests *Guioa perrottetii* Radlk., but *Euphoria annularis* Blanco can scarcely be a *Guioa*. Blanco's description is rather indefinite, but the probabilities are very great that it is only a redescription of the species indicated above. It is certainly not *Arytera montana* Blume to which it was reduced by Fernandez-Villar, as *Ratonia montana* F.-Vill.

CUBILIA Blume

Euphoria cubili Blanco Fl. Filip. (1837) 287 (sp. nov.); ed. 2 (1845) 200; ed. 3, 2 (1878) 10=**CUBILIA BLANCOI** Blume.

This species was reduced by Fernandez-Villar to *Cubilia rumphii* Blume, which is a synonym of *C. blancoi*, the monotypic genus *Cubilia* being known only from the Philippines, Celebes, and the Moluccas. Blanco's description of *Euphoria cubili* typifies the genus *Cubilia* and, following strict priority, *cubili* should be taken up as the specific name of the plant. The large seeds are edible, when boiled or roasted resembling chestnuts in flavor and consistency. The species is widely distributed in the Philippines, a sylvan form growing at low and medium altitudes, but is apparently nowhere abundant.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, there known as *cubili* (*Merrill: Species Blancoanae No. 705*).

GUIOA Cavanilles

Sapindus koelreuteria Blanco Fl. Filip. (1837) 289 (sp. nov.) = **Koelreuteria arborea** Blanco op. cit. ed. 2 (1845) 202 (nom. nov.); ed. 3, 2 (1878) 13 = **GUIOA KOELREUTERIA** (Blanco) comb. nov. [*Guioa perrottetii* (Blume) Radlk.].

Quassia simaruba Blanco Fl. Filip. ed. 2 (1845) 247; ed. 3, 2 (1878) 94, non Linn. = **GUIOA KOELREUTERIA** (Blanco) Merr.

Fernandez-Villar reduced *Sapindus koelreuteria* Blanco to *Hemigyrosa perrottetii* Blume = *Guioa perrottetii* Radlk., and I formerly expressed the opinion that the reduction was wrong; I am now of the opinion, however, that he was correct. I have accordingly accepted this disposition of Blanco's species and adopted his specific name, it being much older than the one proposed by Blume. Blanco described the same form under the name *Quassia simaruba* (non Linn.), which Fernandez-Villar erroneously reduced to *Cupania glabrata* Kurz, a species that does not extend to the Philippines. *Quassia simaruba* Blanco is unquestionably identical with *Sapindus koelreuteria* Blanco = *Guioa perrottetii* (Blume) Radlk. = *Guioa koelreuteria* (Blanco) Merr. The species is very common and widely distributed in the Philippines.

Illustrative specimen from Rizal Province, Luzon (*Merrill: Species Blancoanae No. 644*).

Sapindus saponaria Blanco Fl. Filip. (1837) 288, non Linn. = **SAPINDUS GUISIAN** Blanco op. cit. ed. 2 (1845) 201 (sp. nov.); ed. 3, 2 (1878) 11 = **GUIOA PLEUROPTERIS** (Blume) Radlk.

Fernandez-Villar reduced this to *Sapindus rarak* DC. (*Dittelasma rarak* Hook. f.), a species that does not extend to the Philippines, and one to which Blanco's description does not apply. I have little hesitation in reducing Blanco's species to *Guioa pleuropteris* (Blume) Radlk., a species widely distributed in the Philippines, and one to which Blanco's description conforms fairly well. I know of no other Philippine sapindaceous plant that conforms at all with Blanco's description.

ARYTERA Blume

Schmidelia conferta Blanco Fl. Filip. ed. 2 (1845) 217 (sp. nov.); ed. 3, 2 (1878) 41 = **ARYTERA LITORALIS** Blume.

Blanco's species was reduced by Fernandez-Villar to *Allophylus zeylanica* Linn., a species that does not occur in the Philippines, and one to which Blanco's description does not at all apply.

As described with "hojas simples" it is no *Arytera,* but I am convinced that the description of the leaves as simple was an error on Blanco's part; another objection to my identification is the length of the aril. The description of the fruits, however, is excellent for *Arytera:* "Dos bayas ovales, pegadas por la base, y despues algo divergentes, comprimidas, con semillas solitarias, cubiertas con un arilo carnoso hasta el tercio de su largo * * * se abren a lo largo por la parte exterior, y están pegadas hasta su mitad en donde se hallan los dos estilos muy cortos." *Arytera litoralis* Bl. is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 861*).

LEPIDOPETALUM Blume

7 **Molinaea arborea** Blanco Fl. Filip. (1837) 292 (sp. nov.); ed. 2 (1845) 204; ed. 3, 2 (1878) 18=**LEPIDOPETALUM PERROTTETII** (Cambess.) Blume (*Cupania ? richii* A. Gray, *Lachnopetalum glabrum* Turcz., *Ratonia lachnopetala* Turcz.).

Blanco's *Molinaea arborea* was reduced by Fernandez-Villar to *Hemigyrosa canescens* Thw., a species that does not extend to the Philippines, and one to which Blanco's description does not apply. In my previous consideration of Blanco's species I erroneously referred it to *Guioa perrottetii* Radlk., chiefly for the reason that the native name *salab,* cited by Blanco, properly belongs to *G. perrottetii* Radlk. However, Blanco's description does not apply to Radlkofer's species, but does apply to *Lepidopetalum perrottetii* Blume. Again *Guioa perrottetii* does not occur in Parañaque, while *Lepidopetalum perrottetii* is abundant along tidal streams in Parañaque; its young leaves are notably red, as indicated by Blanco. In the provinces near Manila it flowers in January and February, and the inflorescences are borne on the branches among and below the leaves.

Illustrative specimens from Parañaque (one of the localities cited by Blanco sub. *Molinaea arborea*), Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 650*); Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 876*).

DODONAEA Linnaeus

Dodonaea angustifolia Linn. f.; Blanco Fl. Filip. (1837) 312; ed. 2 (1845) 217; ed. 3, 2 (1878) 40=**DODONAEA VISCOSA** (Linn.) Jacq.

The plant that Blanco described is manifestly one of the forms of this widely distributed species. It is widely distributed in the Archipelago, especially along the seashore, but extends inland

in some regions, growing at considerable altitudes on the mountains in northern Luzon.

Illustrative specimen from Tayabas Province, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 601*).

HARPULLIA Roxburgh

Ptelea arborea Blanco Fl. Filip. (1837) 63 (sp. nov.) = **Seringia lanceolata** Blanco op. cit. ed. 2 (1845) 45 (nom. nov.); ed. 3, 1 (1877) 85 = **HARPULLIA ARBOREA** (Blanco) Radlk. (*H. cupanioides* F.-Vill., non Roxb.).

This species is common and widely distributed in the Philippines, and as indicated by Blanco, the bark is used to stupefy fish. It is commonly known as *puas*. *Blancoa arborea* Blume is a synonym.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 339*).

BALSAMINACEAE

IMPATIENS Linnaeus

Impatiens triflora Blanco Fl. Filip. (1837) 636; ed. 2 (1845) 443; ed. 3, 3 (1879) 32, *t. 424*, non Linn. = **IMPATIENS BALSAMINA** Linn.

This species is commonly cultivated for ornamental purposes throughout the Philippines, and is generally known to the Tagalogs as *camantigui*.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 591*).

RHAMNACEAE

VENTILAGO Gaertner

Enrila dichotoma Blanco Fl. Filip. (1837) 709 (gen. et sp. nov.) = **Ventilago monoica** Blanco op. cit. ed. 2 (1845) 124 (nom. nov.); ed. 3, 1 (1877) 223 = **VENTILAGO DICHOTOMA** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 32, excl. syn. *V. luzoniensis* Vid. (*V. maderaspatana* F.-Vill., non Gaertn., *Kurrimia gracilis* Vid., *Ventilago gracilis* Merr. & Rolfe).

For a discussion of the synonymy see Merrill in Philip. Journ. Sci. 4 (1909) Bot. 287. The material issued in the illustrative set is not exactly like the specimens from Rizal Province, Luzon, the type locality of the species, but does not appear to differ specifically. In case two species are represented, Blanco's species should be interpreted by *Vidal 1122, For. Bur. 3073 Ahern's collector, Bur. Sci. 3303 Ramos*, and *Loher 4685, 4686*, rather than by the Palawan specimens.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 633*).

ZIZYPHUS Jussieu

Rhamnus talanai Blanco Fl. Filip. (1837) 171 (sp. nov.)=**Zizyphus latifolia** Blanco op. cit. ed. 2 (1845) 121 (*zicyphus*); ed. 3, 1 (1877) 217 non Roxb.=**ZIZYPHUS TALANAI** (Blanco) comb. nov.

Rhamnus zonulatus Blanco Fl. Filip. (1837) 172=**Zizyphus zonulata** Blanco op. cit. ed. 2 (1845) 120 (*Zicyphus*); ed. 3, 1 (1877) 215=**ZIZYPHUS TALANAI** (Blanco) **Merr.** (***Z. arborea* Merr.**).

Both of Blanco's descriptions manifestly apply to the same species, and *Rhamnus talanai* Blanco has page priority. The form that I described as *Zizyphus arborea* is the same and must be reduced. Fernandez-Villar erroneously reduced the former to *Zizyphus oenoplia* Mill. and the latter to *Z. xylopyrus* Willd., both manifestly erroneous reductions. The species is widely distributed in the Philippines, the leaves varying from entirely glabrous to rather prominently pubescent. As to *Rhamnus talanai* Blanco, his description, while short, applies unmistakably to the form as here interpreted and to no other known Philippine representative of the genus. Blanco's specimens were from San Mateo, Rizal Province, Luzon, a region thoroughly well known botanically; the Tagalog name *talanai,* cited by Blanco, seems to be no longer in use.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 12*).

Rhamnus jujuba Linn.; Blanco Fl. Filip. (1837) 172=**ZIZYPHUS JUJUBA** Lam.; Blanco op. cit. ed. 2 (1845) 120, ed. 3, 1 (1877) 215, *t. 57.*

This species is occasional in cultivation at low altitudes in the Philippines; certainly introduced after the Spanish occupation of the Philippines.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 356*).

Rhamnus zizyphus Blanco Fl. Filip. (1837) 170, non Linn.=**Zizyphus lotus** Blanco op. cit. ed. 2 (1845) 121 (*Zicyphus*); ed. 3, 1 (1877) 216, *t. 433,* non Lam.=**ZIZYPHUS TRINERVIA** (Cav.) Poir. (*Z. exserta* DC.).

The species is very common and widely distributed at low altitudes in Luzon; it is universally known in the Tagalog provinces as *duclap. Zizyphus exserta* was a new name proposed by de Candolle for *Z. trinervia* Poir., but Poiret's name is valid.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 348*).

Rhamnus dalanta Blanco Fl. Filip. (1837) 171 (sp. nov.)=**Zizyphus dalanta** Blanco op. cit. ed. 2 (1845) 121 (*Zicyphus*) (comb. nov.), ed. 3, 1 (1877) 217=? **ZIZYPHUS sp.**

A species of uncertain status, but probably a *Zizyphus,* and perhaps identical with *Zizyphus talanai* (Blanco) Merr. The

description is very short and consists only of the statement that the trunk is without spines, the leaves alternate, obliquely ovate, 7-nerved, obtusely serrate, that it was from Bonbonon, Negros, was there known as *dalanta*, and that the fruits were edible. Inquiries made of local officials in Bonbonon elicited the information that the name *dalanta* was unknown to them. My only reason for not definitely reducing the species to *Zizyphus talanai* is that Blanco describes the leaves as 7-nerved, a character that applies to no known Philippine representative of the genus.

COLUBRINA Brongniart

Rhamnus carolinianus Blanco Fl. Filip. (1837) 169; ed. 2 (1845) 119; ed. 3, 1 (1877) 214, non Walt.=**COLUBRINA ASIATICA** (Linn.) L. C. Rich.

Blanco's species was reduced by Fernandez-Villar, by error, to *Rhamnus wightii* W. & A., a species that does not occur in the Philippines. The description, habitat, and the Tagalog name *cabatiti*, given by Blanco, all agree with *Colubrina asiatica* L. C. Rich., which is common and widely distributed along the seashore throughout the Philippines.

Illustrative specimen from Pasay, Rizal Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 35*).

GOUANIA Linnaeus

Gouania domingensis Blanco Fl. Filip. (1837) 196; ed. 2 (1845) 138 (*Govania*); ed. 3, 1 (1877) 248, non Linn.=**GOUANIA MICROCARPA** DC.

This species is common and widely distributed in the Philippines at low altitudes. Blanco's species has been reduced to *Gouania leptostachya* DC. by Fernandez-Villar, but the common Luzon form appears to me to be *G. microcarpa* rather than *G. leptostachya*, a conclusion also reached by Vidal.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 250*).

VITACEAE

CISSUS Linnaeus

CISSUS QUADRANGULARIS Linn.; Blanco Fl. Filip. (1837) 72; ed. 2 (1845) 52; ed. 3, 1 (1877) 97.

The Linnean species was correctly interpreted by Blanco. It is of very local occurrence in the Philippines and apparently thrives only in those provinces subject to a prolonged dry season. It occurs only in the settled areas and is manifestly a purposely introduced plant in the Philippines.

Illustrative specimen from Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 804*).

Cissus simplex Blanco Fl. Filip. (1837) 72 (sp. nov.)=**Cissus latifolia** Blanco op. cit. ed. 2 (1845) 52; ed. 3, 1 (1877) 96, non Lam.=**CISSUS PYRRHODASYS** Miq.

This species was reduced by Fernandez-Villar to *Vitis adnata* Wall., which is correct as *Vitis* (*Cissus*) *adnata* Wall. has been interpreted by many authors. However, it is apparent that *Vitis adnata* Wall., as generally interpreted, is a collective species. It seems probable that this rather widely distributed Philippine form is really *Cissus aristata* Blume [*C. assamica* Craib, var. *pilosissima* Gagnep. in Not. Syst. 1 (1911) 353], and Blume's name is much the older; it is at least the form described by Miquel as *Cissus pyrrhodasys* Miq.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 797*).

Cissus vesicatoria Blanco Fl. Filip. ed. 2 (1845) 50 (*vexicatorus*) (sp. nov.); ed. 3, 1 (1877) 94, *t. 318*=**CISSUS REPENS** Lam.

I have followed Fernandez-Villar in the reduction and can give no evidence for or against the correctness of the reference. Blanco gives no description whatever, so that his name is a *nomen nudum*. His entire data consists only of the following: "*Cissus vexicatorus*. Enredadera de cuyas hojas usan los indios para cáusticos.—*P. Pirapit angin.*"

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 334*).

COLUMELLA Loureiro

(*Cayratia* Jussieu)

Cissus rubescens Blanco Fl. Filip. (1837) 71 (sp. nov.)=**Cissus alata (?)** Blanco op. cit. ed. 2 (1845) 51; ed. 3, 1 (1877) 95, non Jacq.=**COLUMELLA GENICULATA** (Blume) Merr. (*Cissus geniculata* Blume, *Cayratia geniculata* Gagnep.).

Blanco's description in general applies to Blume's species and to no other known Philippine form. The illustrative specimens have broad leaflets that cannot be described as "lanceolate" as Blanco indicates for his species, but other Philippine material representing apparently the same species has leaflets that approach lanceolate in outline. The fruits are globose, very soft and fleshy, and pale-pink in color.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 72*).

Cissus acida Blanco Fl. Filip. (1837) 69; ed. 2 (1845) 50; ed. 3, 1 (1877) 94, *t. 24*, non Linn.=**COLUMELLA TRIFOLIA** (L.) Merr. (*Cissus carnosa* Lam., *Cissus trifolia* K. Sch., *Cayratia carnosa* Gagnep.).

This species presents considerable variation in the size of its leaflets and in the character of its indumentum, varying from practically glabrous to distinctly pubescent. It is common and widely distributed in the settled areas in the Philippines, but is not a sylvan species. Gagnepain is certainly correct in his segregation of *Cayratia* as a genus distinct from *Cissus*, but the oldest generic name for the group is *Columella* Lour. (1790), which will have to be taken up unless it is excluded by some future list of generic *nomina conservanda.*

Illustrative specimen from Angat, Bulacan Province, Luzon, August, 1912 (*Merrill: Species Blancoanae No. 296*).

TETRASTIGMA Planchon

Cissus pedata Blanco Fl. Filip. (1837) 71; ed. 2 (1845) 52; ed. 3, 1 (1877) 96, *t. 398*, non Lam.=**TETRASTIGMA HARMANDII** Planch.

This species is common and widely distributed in central Luzon at low altitudes, the fruits edible. It has erroneously been referred to *Tetrastigma lanceolarium* Roxb.

Illustrative specimen from Manila, Luzon, December, 1913, here known as *ayo* (Tagalog) (*Merrill: Species Blancoanae No. 326*).

LEEA Linnaeus

Aquilicia sambucina Blanco Fl. Filip. (1837) 178, non Linn.=**Leea sambucina** Blanco op. cit. ed. 2 (1845) 126; ed. 3, 1 (1877) 226, *t. 60*, non Willd.=**LEEA MANILLENSIS** Walp. in Nov. Act. Acad. Nat. **19** (1843) **Suppl. 1: 314.**

This species is common and widely distributed in Luzon at low and medium altitudes, growing in thickets on open slopes, etc. The form Blanco described was reduced by Fernandez-Villar to *Leea rubra* Blume, but Walpers's species is apparently distinct from that described by Blume.

Illustrative specimen from Batangas Province, Luzon, August, 1914, there known as *caliantang* (*Merrill: Species Blancoanae No. 587*).

Ticorea aculeata Blanco Fl. Filip. (1837) 85 (sp. nov.)=**Leea aculeata** Blanco op. cit. ed. 2 (1845) 127 (comb. nov.); ed. 3, 1 (1877) 227, *t. 306* (as *L. biserrata* Miq.)=**LEEA ACULEATA** Blume.

Blanco transferred his *Ticorea aculeata* to *Leea* as *Leea aculeata* Blanco without reference to the earlier *Leea aculeata* Blume. The forms described by Blanco and by Blume under the same specific name are apparently identical. The species is widely

distributed in the Philippines and is characterized by having small scattered spines on the trunk and branches, but with very few or no spines on the ultimate branchlets.

Illustrative specimens from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 638*) ; Arayat, Pampanga Province, Luzon, (a topotype) (*Merrill: Species Blancoanae No. 686*).

ELAEOCARPACEAE

ELAEOCARPUS Linnaeus

Vallea calomala Blanco Fl. Filip. (1837) 439 (sp. nov.) = **Aceratium calomala** Blanco op. cit. ed. 2 (1845) 306 (comb. nov.) ; ed. 3, 2 (1878) 204 = **ELAEOCARPUS CALOMALA** (Blanco) Merr. in Philip. Journ. Sci. 10 (1915) Bot. 43 (*E. isotrichus* F.-Vill., E. *philippinensis* Warb., *Monocera isotricha* Turcz.).

A species of wide distribution at low and medium altitudes in Luzon and Mindoro. By some authors it has been referred to *Elaeocarpus oblongus* Gaertn.; the status of Gaertner's species is very uncertain.

Illustrative specimen from Antipolo, Rizal Province, Luzon, February, 1914 (*Merrill: Species Blancoanae No. 276*).

ELAEOCARPUS SYLVESTRIS Blanco Fl. Filip. ed. 2 (1845) 306; ed. 3, 2 (1878) 203.

This was reduced by Fernandez-Villar to *Elaeocarpus oblongus* Gaertn., a species not definitely known from the Philippines, and one to which Blanco's description does not at all apply. His specimens were from Cebu, the tree there known as *cabalte* or *cabilte*, and his description unmistakably applies to *Elaeocarpus*. The description is too imperfect to warrant an identification of the species from it alone, and no species of the genus in our herbarium bears the native name cited by Blanco. The petals are divided into about twelve fimbriae, the stamens are about twelve in number, awned, and the fruit is described as being smaller than a pea. The clue to the identity of this species is in the native name, or in more comprehensive collections of *Elaeocarpus* from Cebu than we possess at the present time.

TILIACEAE

BERRIA Roxburgh

Triopteris polyandra Blanco Fl. Filip. (1837) 380 (*poliandra*) (sp. nov.); ed. 2 (1845) 268; ed. 3, 2 (1878) 133 = **BERRIA AMMONILLA** Roxb.

This reduction was made by Fernandez-Villar, but in my previous consideration of Blanco's species I doubted the correctness of it, stating that Fernandez-Villar's reduction was "certainly

an error, as Blanco's description does not apply to that species [*Berria ammonilla* Roxb.]." I am now of the opinion that F.-Villar was correct unless one wishes to segregate the Philippine form from the Indo-Malayan one as a distinct species, which is hardly practicable. The Philippine form has been described by Turczaninow as *Hexagonotheca cordata*. The species is of very local occurrence in Luzon, in Batangas, Union, Zambales, and Bataan Provinces, Blanco's data extending the range to Bulacan. The Tagalog name *pacpac balang* means "locust's wings," apparently selected with reference to the fruit characters; attempts to locate the tree under the above native name resulted in the bringing in of *Gyrocarpus americanus* Jacq.

Illustrative specimen from young trees cultivated in Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 816*).

CORCHORUS Linnaeus

Corchorus catharticus Blanco Fl. Filip. (1837) 442 (sp. nov.) =**CORCHORUS OLITORIUS** Linn.; Blanco op. cit. ed. 2 (1845) 308; ed. 3, 2 (1878) 207.

The species Blanco described as new, *Corchorus catharticus*, in the first edition of his Flora de Filipinas, he correctly reduced to the Linnean *C. olitorius* in the second edition. The species is widely distributed in the Philippines at low and medium altitudes in the settled areas. It occurs as a weed in waste places, open wet lands, banks or rice paddies, etc., but is not cultivated or if cultivated then on a very small scale.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 388*).

CORCHORUS CAPSULARIS Linn.; Blanco Fl. Filip. (1837) 442; ed. 2 (1845) 308; ed. 3, 2 (1878) 206.

The Linnean species was correctly interpreted by Blanco. It is widely distributed in the Philippines at low and medium altitudes in the settled areas, occurring as a weed in waste places, on the banks of rice paddies, etc. It is not cultivated on a commercial scale in the Archipelago.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 387*).

Corchorus aestuans Blanco Fl. Filip. (1837) 441 (sp. nov.) =**CORCHORUS ACUTANGULUS** Lam.; Blanco op. cit. ed. 2 (1845) 308; ed. 3, 2 (1878) 206, *t. 141*.

This species is common and widely distributed in the settled areas of the Philippines at low altitudes; a weed, certainly introduced.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 225*).

TRICHOSPERMUM Blume

Eroteum lanigerum Blanco Fl. Filip. (1837) 440 (sp. nov.); ed. 2 (1845) 307; ed. 3, 2 (1878) 205=**TRICHOSPERMUM LANIGERUM** (Blanco) comb. nov. (*Trichospermum trivalve* Merr.).

Fernandez-Villar made no attempt to reduce this species, but Blanco's description applies unmistakably to *Trichospermum trivalve* Merr., and I have no hesitation in adopting Blanco's specific name for this species. *Eroteum lanigerum* Blanco is not included in Index Kewensis.

Illustrative specimen from Rizal Province, Luzon, October, 1916 (*Merrill: Species Blancoanae No. 1032*).

GREWIA Linnaeus

Mallococca parva Blanco Fl. Filip. (1837) 443 (sp. nov.)=**Grewia mallococca** Blanco op. cit. ed. 2 (1845) 310; ed. 3, 2 (1878) 209, non Linn. f.=**GREWIA MULTIFLORA** Juss.

This species is very common and widely distributed at low altitudes in the Philippines, its most common Tagalog name being *danglin* as cited by Blanco.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 547*).

Mallococca crenata Blanco Fl. Filip. (1837) 442 (sp. nov.), non Forst.=**Grewia ? multiflora** Blanco op. cit. ed. 2 (1845) 309; ed. 3, 2 (1878) 209, non Juss.=**GREWIA ACUMINATA** Juss. (*G. umbellata* Roxb.).

This species is widely distributed in the Philippines at low and medium altitudes. The Philippine form seems to be identical with the Malayan *Grewia acuminata* Juss.

Illustrative specimen from Union Province, Luzon, June, 1913 (*Merrill: Species Blancoanae No. 4*).

Helianthemum triflorum Blanco Fl. Filip. ed. 2 (1845) 309 (sp. nov.); ed. 3, 2 (1878) 208 (non *Grewia triflora* Walp.)=**GREWIA STYLOCARPA** Warb. in Perk. Frag. Fl. Philip. (1904) 104.

Blanco's species was erroneously reduced by Fernandez-Villar to *Archytaea vahlii* Choisy=*Archytaea alternifolia* (Vahl) Hochr., of the *Theaceae*, but Blanco's description does not at all agree with this species, and moreover no representative of *Archytaea* is known from the Philippines. *Grewia stylocarpa* Warb. is very common and widely distributed in the Philippines at low and medium altitudes, and Blanco's description applies to it. It has very many recorded native names, but the nearest approach to *iring*, as cited by Blanco, is *camiring*.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 864*).

GREWIA SERRATA Blanco Fl. Filip. (1837) 444 (sp. nov.)=**Columbia serratifolia** Blanco op. cit. ed. 2 (1845) 427; ed. 3, 2 (1879) 412, non DC. (*Grewia ovata* **Merr.!**).

The form that Blanco described as *Grewia serrata* is unquestionably identical with the one described by me in the year 1912 as *Grewia ovata*, and Blanco's name should be retained for it. He erroneously reduced his species to *Columbia serratifolia* DC. in the second edition of his Flora de Filipinas, but it has nothing to do with the latter. His material was from Tala, Bulacan Province, Luzon, and his description conforms exactly with the characters of *Grewia ovata* Merr. Fernandez-Villar erroneously reduced it to *Grewia columnaris* Sm., a species not known from the Philippines, while I previously thought that it might be the same as *G. multiflora* Juss.

COLUMBIA Persoon

Columbia anilao Blanco Fl. Filip. (1837) 654 (sp. nov.); ed. 2 (1845) 426; ed. 3, 2 (1879) 412, *t. 272*=**COLUMBIA SERRATIFOLIA** (Cav.) DC. (*C. americana* **Pers.**, *Colona serratifolia* **Cav.**).

This species is common and widely distributed in the Philippines and is commonly known as *anilao*, a name which is also applied to other species of the genus and to some species of *Grewia*.

Illustrative specimen from Angat, Bulacan Province, September, 1913 (*Merrill: Species Blancoanae No. 566*).

TRIUMFETTA Linnaeus

Triumfetta semitriloba Blanco Fl. Filip. (1837) 406; ed. 2 (1845) 283; ed. 3, 2 (1878) 161, non Linn.=**TRIUMFETTA BARTRAMIA** Linn. (*T. rhomboidea* **Jacq.**).

This species is common and widely distributed at low altitudes in the Philippines, as an introduced weed. Blanco's description manifestly applies to this species, which is much more abundant in the Philippines than is true *Triumfetta semitriloba* Linn.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 271*).

MALVACEAE

ABUTILON Gaertner

Sida indica Linn.; Blanco Fl. Filip. (1837) 547; ed. 2 (1845) 383; ed. 3, 2 (1879) 339, *t. 337*=**ABUTILON INDICUM** (Linn.) Sweet.

This species is common and widely distributed in the Philip-

pines in and about towns and in the settled areas generally; it is certainly an introduced species in the Archipelago.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 361*).

MALVASTRUM A. Gray

Malva coromandelina Linn.; Blanco Fl. Filip. (1837) 551=**Malva luzonica** Blanco op. cit. ed. 2 (1845) 385 (sp. nov.); ed. 3, 2 (1879) 343, *t. 251*=**MALVASTRUM COROMANDELINUM** (L.) Garcke (*M. tricuspidatum* A. Gray).

This pantropic weed, undoubtedly of American origin, is very common in and about towns in the Philippines. The original *Malva coromandelina* Linn. includes the present species and *Sida acuta*, but the first reference given by Linnaeus is manifestly the *Malvastrum* and not the *Sida;* see Merrill in Philip. Journ. Sci. 7 (1912) Bot. 240.

Illustrative specimen from Manila, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 451*).

ALTHAEA Linnaeus

Althaea sinensis Blanco Fl. Filip. (1837) 552, non Cav.=**ALTHAEA ROSEA** Cav.; Blanco op. cit. ed. 2 (1845) 386; ed. 3, 2 (1879) 345.

Blanco's description applies unmistakably to the common hollyhock, which he first placed under *Althaea sinensis* Cav., but later referred to *A. rosea* Cav., its proper name. He saw only cultivated specimens in northern Luzon. The species is apparently no longer cultivated in the Philippines or, if so, then very rarely.

SIDA Linnaeus

Sida truncatula Blanco Fl. Filip. (1837) 548, non J. F. Gmel.=**Sida philippica** Blanco op. cit. ed. 2 (1845) 383; ed. 3, 2 (1879) 340, non DC.=**SIDA RETUSA** Linn.

This species is common and widely distributed at low and medium altitudes in the settled areas of the Philippines. It is certainly an introduced plant in the Archipelago. It was reduced by Fernandez-Villar to *Sida rhombifolia* Linn. var. *retusa* Mast., but I consider *Sida rhombifolia* and *S. retusa* to be specifically distinct. *Sida philippica* DC. is an exact synonym for *S. rhombifolia* Linn., but Blanco's description is unmistakably *Sida retusa* Linn.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 123*).

Sida semicrenata Link; Blanco Fl. Filip. ed. 2 (1845) 384; ed. 3, 2 (1879) 341, *t. 248*=**SIDA RHOMBIFOLIA L.**

This species, certainly an introduced one in the Philippines,

is found in and about towns throughout the settled areas in the Archipelago. The form described by Blanco as *S. semicrenata*, whether or not quite the same as Link's species I cannot determine, is exactly the form described by de Candolle as *Sida philippica*. I take it to be very typical *Sida rhombifolia* Linn.

Illustrative specimen from Manila, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 450*).

Sida lanceolata Retz.; Blanco Fl. Filip. (1837) 548=**Sida frutescens** Cav.; Blanco op. cit. ed. 2 (1845) 384; ed. 3, 2 (1879) 341, *t. 366*=**SIDA ACUTA** Burm. f.

Blanco correctly interpreted both *Sida lanceolata* Retz. in the first edition and *Sida frutescens* Cav. in the second edition of his Flora de Filipinas, but Burman's name is much the older, dating from 1768; *Sida carpinifolia* Linn. f. (1781) is a synonym. It is very common in waste places in and about towns throughout the Philippines at low and medium altitudes and is certainly not a native of the Archipelago but an introduced weed. There is no indication that Blanco intended his *Sida lanceolata* as Retzius's species, but this is presumably the case as he likewise does not indicate it as a new species.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 457*).

MALACHRA Linnaeus

Napaea latifolia Blanco Fl. Filip. ed. 2 (1845) 387 (sp. nov.); ed. 3, 2 (1879) 346, *t. 295*=**MALACHRA CAPITATA** Linn.

A common and widely distributed weed in the Philippines, occurring in the settled areas at low altitudes. Introduced from Mexico at an early date.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 351*).

Napaea scabra Blanco Fl. Filip. (1837) 553; ed. 2 (1845) 386; ed. 3, 2 (1879) 346, non Linn.=**MALACHRA FASCIATA** Jacq. (*M. linearilobа* Turcz., type from the Philippines, *Malachra fasciata* Jacq., var. *linearilobа* Gürke).

Common and widely distributed in the Philippines at low altitudes in the settled areas, introduced from Mexico at an early date.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 270*).

URENA Linnaeus

Urena multifida Cav.; Blanco Fl. Filip. (1837) 540; ed. 2 (1845) 378; ed. 3, 2 (1879) 332, *t. 243*=**URENA LOBATA** Linn.

Blanco's description applies to the forms that have been

described as *Urena lobata* Linn. and as *Urena sinuata* Linn., which are, I believe, not specifically distinct. Gagnepain is apparently correct in reducing the latter to the former as a variety for all intergrading forms are found; see Lecomte Fl. Gèn. Indochine 1 (1910) 414. Both typical *Urena lobata* Linn. and typical *Urena sinuata* Linn. are common in the Philippines, widely distributed at low altitudes in the settled areas, both certainly introduced.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (form approaching *Urena sinuata* Linn.) (*Merrill: Species Blancoanae No. 431*).

HIBISCUS Linnaeus

Hibiscus bifurcatus Blanco Fl. Filip. (1837) 545, ed. 2 (1845) 380; ed. 3, 2 (1879) 334, *t. 347*, non Cav.=**HIBISCUS SURATTENSIS** Linn.

This species is widely distributed in the settled areas of the Philippines at low and medium altitudes. It is probably an introduced plant in the Archipelago.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 670*).

HIBISCUS TILIACEUS Linn.; Blanco Fl. Filip. (1837) 541; ed. 2, (1845) 379; ed. 3, 2 (1879) 332, *t. 274*.

The Linnean species was correctly interpreted by Blanco. It is common along the seashore throughout the Philippines. It is commonly known as *balibago* and *malibago*.

Illustrative specimen from Pasay, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 399*).

HIBISCUS MUTABILIS Linn.; Blanco Fl. Filip. (1837) 546, ed. 2 (1845) 381; ed. 3, 2 (1879) 336, *t. 175*.

The Linnean species was correctly interpreted by Blanco. It is found in the Philippines only in cultivation and is universally known as *mapola*.

Illustrative specimen from Manila, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 247*).

HIBISCUS ROSA-SINENSIS Linn.; Blanco Fl. Filip. (1837) 543; ed. 2 (1845) 379; ed. 3, 2 (1879) 333, *t. 270*.

The Linnean species was correctly interpreted by Blanco. It is found in the Philippines only in cultivation, its common Tagalog name being *gomamela*.

Illustrative specimen from Manila, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 246*).

ABELMOSCHUS Medicus

Hibiscus abelmoschus Linn.; Blanco Fl. Filip. (1837) 545; ed. 2 (1845) 380; ed. 3, 2 (1879) 335, *t. 245*=**ABELMOSCHUS MOSCHATUS** Medic.

This species is widely distributed in the Philippines at low altitudes in waste places, open damp lands in and about towns, etc. It is probably not a native of the Archipelago and was introduced in the prehistoric period.

Illustrative specimen from Manila, Luzon, December, 1913, here known as *castoli* (*Merrill: Species Blancoanae No. 327*).

KOSTELETZKYA Presl

Hibiscus batacensis Blanco Fl. Filip. (1837) 544 (sp. nov.); ed. 2 (1845) 380; ed. 3, 2 (1879) 334=**KOSTELETZKYA BATACENSIS** (Blanco) F.-Vill. Novis. App. (1880) 24.

This species is of very local occurrence in Luzon, and has all the appearance of an introduced weed. It was described by Blanco from Batac, Ilocos Norte Province, has been collected once in Ilocos Sur by Mearns, and once in Pasay, Rizal Province, Luzon, a town bordering the City of Manila to the south. A duplicate of Mearns's specimen was sent to Kew, and was reported as not matching any named species in the Kew Herbarium. The species, then, is apparently known only from the Philippines, yet I am of the opinion that it is not a native of the Archipelago, but that it was accidentally introduced from Mexico, probably from Acapulco, through the medium of the Acapulco-Manila galleons.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 877*).

THESPESIA Correa

Hibiscus populneus Linn.; Blanco Fl. Filip. (1837) 544=**THESPESIA POPULNEA** (Linn.) Corr.; Blanco op. cit. ed. 2 (1845) 381; ed. 3, 2 (1879) 337, *t. 247.*

Thespesia banalo Blanco Fl. Filip. ed. 2 (1845) 382 (sp. nov.); ed. 3, 2 (1879) 338, *t. 269*=**THESPESIA POPULNEA** (Linn.) Corr.

After a careful examination of a very full series of Philippine specimens I can recognize but a single species here; Fernandez-Villar, however, reduced *Thespesia banalo* Blanco to *T. macrophylla* Blume, but following Blume's differential diagnoses of *T. populnea* and *T. macrophylla* Blanco's *T. banalo* is the same as *T. populnea*, as Blanco described his species as having seven-nerved leaves and long pedicels. There are two forms in the Philippines, one with pedicels about as long as the petioles, and one with much shorter pedicels, but I am not convinced that two species are represented. Along the seashore throughout the Philippines. It is commonly known as *banago* or *banalo*.

Illustrative specimen from Manila, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 33*).

Thespesia sublobata Blanco Fl. Filip. ed. 2 (1845) 382 (sp. nov.); ed. 3, 2 (1879) 338, *t. 355*=**THESPESIA LAMPAS** (Cav.) Dalz. & Gib.

This species is not uncommon in the Philippines and is widely distributed. It has all the appearance of being an introduced plant in the Archipelago.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 561*).

GOSSYPIUM Linnaeus

Gossypium herbaceum Blanco Fl. Filip. (1837) 534; ed. 2 (1845) 374; ed. 3, 2 (1879) 329, non Linn.=**GOSSYPIUM PUNCTATUM** Sch. & Thon.

The species Blanco described was interpreted by Fernandez-Villar as *Gossypium herbaceum* Linn., but material of the commonly cultivated form in Batangas shows that this cotton is not the Linnean species, but that it falls in the third section of the genus as defined by Watt, fuzzy-seeded cottons with free bracteoles [The Wild and Cultivated Cotton Plants of the World (1907) 163] and is *G. punctatum* Sch. & Thon. or perhaps a form of *G. hirsutum* Linn. The form distributed herewith is certainly Blanco's *Gossypium herbaceum*, as it is the common type cultivated in Batangas, whence Blanco secured his specimens, and agrees with his description.

Illustrative specimen from Batangas Province, Luzon, February, 1915, there known as *bulac* (*Merrill: Species Blancoanae No. 761*).

Gossypium perenne Blanco Fl. Filip. (1837) 537 (sp. nov.); ed. 2 (1845) 376; ed. 3, 2 (1879) 330=**GOSSYPIUM ARBOREUM** Linn.

This species, as described by Blanco, is apparently the same as *Gossypium arboreum* Linn., although the Linnean species does not appear in our rather extensive Philippine collections, and if it still occurs in the Archipelago, then it must be very rare and local. Blanco definitely states that it was in former times commonly cultivated, but that its cultivation was being abandoned on account of the small yield of fiber. The reduction to *Gossypium arboreum* Linn. was made by Fernandez-Villar. The form described in the paragraph following *Gossypium perenne* Blanco under the name "*fernambuco*" is *Gossypium brasiliense* Macf.

GOSSYPIUM PANICULATUM Blanco Fl. Filip. (1837) 539 (sp. nov.); ed. 2 (1845) 378; ed. 3, 2 (1878) 331.

This species was reduced by Fernandez-Villar to *Gossypium barbadense* Linn., but specimens of the cotton commonly cultivated in the Ilocano provinces of Luzon, that agree perfectly with Blanco's original description, show that *Gossypium pani-*

culatum Blanco has little in common with *G. barbadense* Linn. As the various species of *Gossypium* are interpreted by Watt, *Gossypium paniculatum* Blanco seems to be a distinct form, and one worthy of specific rank; see C. B. Robinson in Philip. Journ. Sci. 6 (1911) Bot. 343.

Illustrative specimen from Tagudin, Amburayan Subprovince (formerly a part of Ilocos Sur), *comm. Father M. Vanoverbergh*, February, 1916, locally known to the Ilocanos as *cápas*, and to the Igorots as *castíl*, (*Merrill: Species Blancoanae No. 980*).

BOMBACACEAE

BOMBAX Linnaeus

7 **Melaleuca grandiflora** Blanco Fl. Filip. (1837) 615 (sp. nov.) = **BOMBAX CEIBA** Linn.; Blanco op. cit. ed. 2 (1845) 372; ed. 3, 2 (1879) 324, *t. 226*.

Apparently Blanco correctly interpreted *Bombax ceiba* Linn. in the second edition of his Flora de Filipinas, the same plant being described in the first edition as a new species, *Melaleuca grandiflora*. The species is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 843*).

CEIBA Gaertner

Bombax pentandrum Linn.; Blanco Fl. Filip. (1837) 531; ed. 2 (1845) 371; ed. 3, 2 (1879) 324, *t. 238* = **CEIBA PENTANDRA** (Linn.) Gaertn. (*Eriodendron anfractuosum* A. DC.).

This species is common and widely distributed in the Philippines, but usually (? always) planted only. It is certainly not a native of the Archipelago.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 253*).

STERCULIACEAE

PENTAPETES Linnaeus

Pentapetes coccinea Blanco Fl. Filip. (1837) 529 (sp. nov.) = **Pentapetes cebuana** Blanco op. cit. ed. 2 (1845) 369 (nom. nov.); ed. 3, 2 (1879) 319, *t. 235* = **PENTAPETES PHOENICEA** Linn.

This species is of local occurrence in open, rather wet grasslands, and is of wide distribution in the Archipelago; certainly introduced.

Illustrative specimen from Bataan Province, Luzon (*Merrill: Species Blancoanae No. 342*).

MELOCHIA Linnaeus

Hypericum pentandrum Blanco Fl. Filip. (1837) 614 (sp. nov.); ed. 2 (1845) 430; ed. 3, 2 (1879) 417=**MELOCHIA UMBELLATA** (Houtt.) Stapf.
Melochia arborea Blanco op. cit. 524 (sp. nov.); 365; 311, *t. 189*=**MELOCHIA UMBELLATA** (Houtt.) Stapf.

This species is common and widely distributed in the Philippines at low and medium altitudes, being one of the characteristic shrubs and small trees that quickly appear in recently cleared land that has been allowed to revert from cultivation. There is no doubt whatever but that both *Hypericum pentandrum* Blanco and *Melochia arborea* Blanco are the same species. The synonymy of the species is complicated, and I have previously made an attempt to clear it up; see Philip. Journ. Sci. 9 (1914) Bot. 315.

Illustrative specimen from Los Baños, Laguna Province, Luzon, June, 1914, *comm. E. Quisumbing* (*Merrill: Species Blancoanae No. 40*).

Melochia supina Linn.; Blanco Fl. Filip. (1837) 524; ed. 2 (1845) 365; ed. 3, 2 (1879) 310=**MELOCHIA CONCATENATA** Linn. (*M. corchorifolia* Linn.).
Geruma subtriloba Blanco Fl. Filip. (1837) 182 (sp. nov.); ed. 2 (1845) 130; ed. 3, 1 (1877) 232=**MELOCHIA CONCATENATA** Linn. (*M. corchorifolia* Linn.).

Melochia supina Linn. was correctly interpreted by Blanco, but it is a synonym of *M. concatenata* Linn., which has page priority over both *M. corchorifolia* Linn. and *M. supina* Linn. The same form was otherwise described by Blanco as a new species, *Geruma subtriloba* Blanco, which was correctly reduced by Fernandez-Villar. It is very common and widely distributed in the settled areas of the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon (*Merrill: Species Blancoanae No. 325*).

WALTHERIA Linnaeus

WALTHERIA AMERICANA Linn.; Blanco Fl. Filip. (1837) 523; ed. 2 (1845) 364; ed. 3, 2 (1879) 309.

The Linnean species was correctly interpreted by Blanco. *Waltheria indica* Linn. is a synonym and is the name used by most authors for the species; however, *Waltheria americana* Linn. has priority and should be retained. The species is common and widely distributed in the Philippines, occurring as a weed in the open country of the settled areas at low and medium altitudes.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 156*).

COMMERSONIA Forster

Commersonia echinata Forst.; Blanco Fl. Filip. ed. 2 (1845) 160; ed. 3, 1 (1877) 287=**COMMERSONIA BARTRAMIA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 362.

I am now of the opinion that the Philippine form is the same as the Polynesian one and that Blanco correctly interpreted Forster's species. Most of our material, however, has been referred to *C. platyphylla* Andr., which I do not consider to be specifically distinct from *C. echinata* Forst.=*C. bartramia* (Linn.) Merr. Common and widely distributed in the Philippines.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 576*).

ABROMA Jacquin

Ambroma communis Blanco Fl. Filip. (1837) 606 (sp. nov.); ed. 2 (1845) 423; ed. 3, 2 (1879) 404, *t. 425 bis*=**ABROMA FASTUOSA** Jacq.

Ambroma alata Blanco op. cit. 605 (sp. nov.); 422; 404=**ABROMA FASTUOSA** Jacq.

Abroma fastuosa Jacq. (*Ambroma augusta* Linn. f.) is common and widely distributed in the Philippines, and the very pubescent local form has been described by Presl as *Abroma obliqua* Presl, this form probably being identical with *A. mollis* DC. From the abundant Philippine and Indo-Malayan specimens available for comparison, I do not now see how more than one species can be distinguished in the Philippine material. *Ambroma communis* Blanco is manifestly identical with *A. augusta* Jacq., while *A. alata* Blanco is apparently merely a form of the same species. The distinguishing character that Blanco gives for the latter is in the leaf description; namely, "dos alas apareadas que siguen el curso de las venas." *Ambroma alata* Blanco was retained as a distinct species by Fernandez-Villar.

Illustrative specimens from Bauang, Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 806*); Los Baños, Laguna Province, Luzon, *comm. F. W. Foxworthy*, January, 1915 (*Merrill: Species Blancoanae No. 808*).

THEOBROMA Linnaeus

THEOBROMA CACAO Linn.; Blanco Fl. Filip. (1837) 601; ed. 2 (1845) 419; ed. 3, 2 (1879) 403, *t. 275*.

This was introduced into the Philippines in 1663 from Mexico, through the medium of the Acapulco-Manila galleons; it is cultivated in all parts of the Archipelago.

Illustrative specimen from Silanga, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 579*).

PTEROSPERMUM Schreber

Pterospermum hastatum Blanco Fl. Filip. (1837) 528 (sp. nov.); ed. 2 (1845) 367; ed. 3, 2 (1879) 317, *t. 182*=**PTEROSPERMUM DIVERSIFOLIUM** Blume Bijdr. (1825) 88.

This species is common and widely distributed in the Philippines at low and medium altitudes. On young plants and saplings the leaves are usually deeply palmately lobed. Generally known as *bayog* by the Tagalogs.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 533*).

PTEROSPERMUM OBLIQUUM Blanco Fl. Filip. (1837) 529 (sp. nov.)= **Pterospermum semisagittatum** Blanco op. cit. ed. 2 (1845) 368; ed. 3, 2 (1879) 318, *t. 456*, non Ham.

Blanco erred in reducing his *Pterospermum obliquum* to *P. semisagittatum* Ham., as the latter species does not extend to the Philippines. Exact synonyms of *Pterospermum obliquum* Blanco are *Sczegleewia involucrata* Turcz. (1858), and *Pterospermum sczegleewia* Turcz. (1863). From Blanco's description, "Hojas * * * blancas * * * por debajo," it is probable that he also included the form later described as *Pterospermum niveum* by Vidal, a species, however, quite distinct from *Pterospermum obliquum* Blanco as here interpreted.

Illustrative specimen from Rizal Province, Luzon, December, 1912 (*Merrill: Species Blancoanae No. 286*).

HELICTERES Linnaeus

Dombeya decanthera Blanco Fl. Filip. (1837) 349, non Cav.=**Dombeya biserrata** Blanco op. cit. ed. 2 (1845) 244 (sp. nov.); ed. 3, 2 (1878) 90, *t. 91*=**HELICTERES HIRSUTA** Lour. (*H. spicata* Colebr.).

Mimusops talosan Blanco Fl. Filip. (1837) 284 (sp. nov.); ed. 2 (1845) 198; ed. 3, 2 (1878) 6=**HELICTERES HIRSUTA** Lour.

Fernandez-Villar reduced *Mimusops talosan* Blanco to *Helicteres spicata* Colebr. var. *lanigera* Mast., but *H. spicata* Colebr. is the same as *H. hirsuta* Lour. This is certainly the correct disposition of *Mimusops talosan* Blanco. It is very curious that Blanco should have interpreted as a *Mimusops* a species so entirely unrelated to that genus. *Dombeya decanthera* Blanco is manifestly the same as *Mimusops talosan* Blanco. The species is common and widely distributed in the Philippines.

Illustrative specimen from Taytay, Palawan, April, 1913 (*Merrill: Species Blancoanae No. 577*).

KLEINHOVIA Linnaeus

KLEINHOVIA HOSPITA Linn.; Blanco Fl. Filip. (1837) 652; ed. 2 (1845) 455; ed. 3, 3 (1879) 57, *t. 328*.

Kleinhovia serrata Blanco Fl. Filip. (1837) 653 (sp. nov.); ed. 2 (1845) 456; ed. 3, 3 (1879) 58=**KLEINHOVIA HOSPITA** Linn.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the Archipelago at low altitudes, and it is especially characteristic of recently cleared areas that are reverting to a forested condition. *Tanag* is its most universally used native name. Fernandez-Villar did not attempt to reduce *Kleinhovia serrata*. Blanco's description is very short, but he states that it was scarcely to be distinguished from *Kleinhovia hospita* Linn. His specimens were from Pasig. The pubescent form of *Kleinhovia hospita* still occurs in Pasig, but is no longer common. The only possible objection to this reduction of Blanco's species is his description of the leaves as serrate; young leaves are sometimes very obscurely 3-lobed.

Illustrative specimen from Angat, Bulacan Province, Luzon, August, 1913 (*Merrill: Species Blancoanae No. 291*).

STERCULIA Linnaeus

STERCULIA FOETIDA Linn.; Blanco Fl. Filip. (1837) 763; ed. 2 (1845) 524; ed. 3, 3 (1879) 162, *t. 134*.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the Philippines at low altitudes and is commonly known as *calumpang*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 317*).

Sterculia balanghas Blanco Fl. Filip. (1837) 765; ed. 2 (1845) 525; ed. 3, 3 (1879) 165, non Linn.=**STERCULIA CUNEATA** R. Br.

This species is widely distributed in the Philippines at low and medium altitudes, presenting considerable variation especially in vegetative characters.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, here known as *malabonot* (*Merrill: Species Blancoanae No. 237*).

Sterculia alata Blanco Fl. Filip. ed. 2 (1845) 525; ed. 3, 3 (1879) 165, *t. 401*, non Roxb.=**STERCULIA BLANCOI** Rolfe.

This species is widely distributed in the northern and central Philippines at low and medium altitudes. Fernandez-Villar considered that Blanco correctly interpreted Roxburgh's species, but the Philippine form is quite different from that described by Roxburgh.

Illustrative specimen (a topotype) from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 741*).

Sterculia cordifolia Blanco Fl. Filip. (1837) 764 (sp. nov.); ed. 2 (1845) 525; ed. 3, 3 (1879) 163, non Cav.=**STERCULIA PHILIPPINENSIS Merr.**

Sterculia philippinensis Merr. is merely a new name for *Sterculia cordifolia* Blanco, non Cav. Blanco's species was erroneously reduced by Fernandez-Villar to *Sterculia urens* Roxb., one that does not extend to the Philippines. *Sterculia philippinensis* Merr. is a sufficiently characteristic species of wide distribution in the northern and central Philippines.

PTEROCYMBIUM R. Brown

Heritiera tinctoria Blanco Fl. Filip. (1837) 653 (sp. nov.); ed. 2 (1845) 456; ed. 3, 3 (1879) 59=**PTEROCYMBIUM TINCTORIUM** (Blanco) **Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 24.**

This species is common and widely distributed in the Philippines at low altitudes and is very generally known to the Tagalogs as *taloto* or *teluto*. Blanco's species was reduced by Fernandez-Villar to the very closely allied *Pterocymbium javanicum* R. Br., but even if the Philippine form is specifically identical with the Javan one, Blanco's specific name is the older.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 870*).

HERITIERA Dryander

Helicteres apetala Blanco Fl. Filip. (1837) 383, non Jacq.=**Sterculia cymbiformis** Blanco op. cit. ed. 2 (1845) 526 (sp. nov.); ed. 3, 3 (1879) 167, *t. 341*=**HERITIERA LITTORALIS Dry.**

The species that Blanco first erroneously referred to Jacquin's *Helicteres apetala* he later described as a new species, *Sterculia cymbiformis*. The species is common and is found along the seashore throughout the Philippines. It is widely known as *dungon late* or merely as *dungon*, although the latter name properly belongs to *Tarrietia sylvatica* Merr.

Illustrative specimen from Manila, Luzon, March, 1914, *comm. L. J. Reyes* (*Merrill: Species Blancoanae No. 621*).

DILLENIACEAE

TETRACERA Linnaeus

Delima aspera Blanco Fl. Filip. (1837) 429 (sp. nov.); ed. 2 (1845) 299; ed. 3, 2 (1878) 191, *t. 190*=**TETRACERA VOLUBILIS** (Linn.) **Merr.** Interpret. Herb. Amb. (1917) 367 [*Tetracera sarmentosa* (Linn.) Vahl, ***Delima sarmentosa*** Linn.].

Tetracera monocarpa Blanco Fl. Filip. (1837) 459 (sp. nov.)=**Tetracera sarmentosa** Vahl; Blanco Fl. Filip. ed. 2 (1845) 320, ed. 3, 2 (1878) 227=**TETRACERA VOLUBILIS** (Linn.) Merr. Interpret. Herb. Amb. (1917) 367.

There seems to be but the single species represented, although Fernandez-Villar reduced *Tetracera monocarpa* Blanco to *Tetracera macrophylla* Wall. (*T. macrocarpa* Wall.), a species that does not extend to the Philippines. As to a name for the Philippine form, the oldest is *Delima frangulifolia* Presl, a species identical with those of Blanco enumerated above. The species is of very wide distribution in the Philippines and is widely known under its Tagalog name *malacatmon.*

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 369*).

DILLENIA Linnaeus

Dillenia indica Blanco Fl. Filip. (1837) 472, non Linn.=**Dillenia speciosa** Blanco op. cit. ed. 2 (1845) 329; ed. 3, 2 (1878) 244, *t. 199*, non Thunb.=**DILLENIA PHILIPPINENSIS** Rolfe.

This species is common and widely distributed in the Philippines at low and medium altitudes, being universally known as *catmon.*

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 598*).

SAURAUIA Willdenow

Gordonia polysperma Blanco Fl. Filip. (1837) 549 (sp. nov.); ed. 2 (1845) 384 (*polisperma*); ed. 3, 2 (1879) 342=**SAURAUIA POLYSPERMA** (Blanco) comb. nov. (*Saurauia subglabra* Merr.).

Fernandez-Villar reduced this to *Homalium foetidum* Benth., of the *Flacourtiaceae,* but this species does not occur in the Philippines, while moreover Blanco's description does not conform at all with the characters of *Homalium.* Almost word for word the description conforms with the characters of *Saurauia subglabra* Merr., a species that is locally abundant in the regions from which Blanco secured most of his botanical material. Among the numerous species of *Saurauia* now known from the Philippines, *S. subglabra* Merr. best conforms with Blanco's description, and I have no hesitation in adopting Blanco's specific name in place of *subglabra* Merr. It is closely allied to *Saurauia tristyla* DC.

OCHNACEAE

OCHNA Linnaeus

OCHNA FASCICULARIS Blanco Fl. Filip. ed. 2 (1845) 245 (sp. nov.); ed. 3, 2 (1878) 92.

This species was retained by Fernandez-Villar as distinct, but was erroneously transferred to *Brackenridgea,* as *B. fascicu-*

laris (Blanco) F.-Vill. Novis. App. (1880) 40. Van Tieghem has transferred it to the genus *Notochnella* as *N. fascicularis* (Blanco) Van Tiegh. in Ann. Sci. Nat. Bot. VIII 16 (1902) 403. It is rather widely distributed in the Philippines at low and medium altitudes.

Illustrative specimens from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae Nos. 857, 916*).

THEACEAE

THEA Linnaeus

Salceda montana Blanco Fl. Filip. ed. 2 (1845) 374 (gen. et. sp. nov.); ed. 3, 2 (1879) 327=**THEA MONTANA** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) **27** (1905) 21.

This species was reduced by Fernandez-Villar to *Camellia lanceolata* (Blume) Seem., and it is very closely related to *Calpandria lanceolata* Blume if not identical with it. Until there is a critical revision of the genus or until opportunity is had to examine Blume's type, it is perhaps best to consider the Philippine form as distinct under the name *Thea montana* (Blanco) Merr. The species is common and widely distributed on the mountains of the Philippines at medium and higher altitudes.

Illustrative specimens from Bosoboso, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 841*): Bataan Province, Luzon, March, 1915 (*Species Blancoanae No. 894*).

Camellia sasanqua Blanco Fl. Filip. (1837) 530 ed. 2 (1845) 371; ed. 3, 2 (1879) 322, (*sesanqua*) non ? Thunb.=**THEA** sp.

The status of the form that Blanco described is indeterminable from his description. His material was from a plant cultivated in Manila, which he believed to be the tea plant. No representative of the genus is to be found in cultivation in or near Manila at the present time. Fernandez-Villar referred it to *Camellia drupifera* Lour., but all that can definitely be determined is that it is a species of *Thea*, perhaps *Thea sinensis* Linn.

TERNSTROEMIA Nuttall

Llanosia toquian Blanco Fl. Filip. ed. 2 (1845) 319 (gen. et sp. nov.); ed. 3, 2 (1878) 225=**TERNSTROEMIA TOQUIAN** F.-Vill. (*Taonabo toquian* Merr., *Ternstroemia lobbiana* Pierre).

This species is widely distributed on the mountains of the Philippines.

Illustrative specimen from Mount Arayat, Pampanga Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 720*).

GUTTIFERAE

CRATOXYLON Blume

Hypericum aegyptium Blanco Fl. Filip. (1837) 615 (*aegiptium*); ed. 2 (1845) 430; ed. 3, 2 (1879) 418, non Linn.=**CRATOXYLON FORMOSUM (Jack) Dyer.**

The species is common and of wide distribution in the Philippines. The leaves are commonly acute or minutely acuminate, more rarely slightly retuse at the apex as Blanco described the form he had.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 632*).

Cratoxylon hornschuchii Llanos Frag. Pl. Filip. (1851) 86; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 65, non Blume=**CRATOXYLON CELEBICUM** Blume [*C. floribundum* (Turcz.) F.-Vill.].

Cratoxylum sumatranum Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 308*, non Blume=**CRATOXYLON CELEBICUM** Blume.

Llanos's conception of *Cratoxylon hornschuchii* Blume was reduced by Fernandez-Villar to *C. sumatranum* Bl., a species that does not extend to the Philippines. The description applies very closely to *Cratoxylon floribundum* F.-Vill., a species based on Philippine material, but which I am unable to distinguish from *Cratoxylon celebicum* Blume. *C. floribundum* F.-Vill. is, however, considered by Gagnepain to be identical with *C. clandestinum* Blume, so that apparently a critical examination of Blume's types will be necessary to settle the status of the three species involved.

Illustrative specimen from Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 390*).

Hypericum olympicum Blanco Fl. Filip. (1837) 613; ed. 2 (1845) 429; ed. 3, 2 (1878) 416, non Linn.=**CRATOXYLON BLANCOI** Blume.

Cratoxylon hornschuchii Naves in Blanco Fl. Filip. ed. 3 (1877–83) *t. 254*, non Blume=**CRATOXYLON BLANCOI** Blume.

Cratoxylon blancoi Blume is merely a new name for *Hypericum olympicum* Blanco, non Linn., and hence the species must be interpreted from Blanco's description. There are but two possible interpretations of Blanco's species, one the broad-leaved, short-petioled form with the leaves subacute to rounded or cordate at the base, and one the narrow-leaved form which is *Cratoxylon floribundum* (Turcz.) F.-Vill. which I consider to be identical with *C. celebicum* Blume, and which Gagnepain, Not. Syst. 1 (1909) 20, refers to *C. clandestinum* Blume. *Cratoxylon blancoi* is certainly not the same as *C. arborescens* (Vahl)

Blume, as Gagnepain has considered it, for *C. arborescens* does not extend to the Philippines. Blanco's description is unsatisfactory and applies in part to both *C. blancoi*, as here interpreted, and to *C. floribundum* F.-Vill.; as to leaf form the former, as to leaf base both the former, as I interpret it, and to the latter. The original description of the leaves is "escotadas en la base, ovales." *Cratoxylon blancoi* Bl. as I interpret it always has oval leaves, but they are often cordate at the base, not always tapering, while *C. floribundum* F.-Vill. never has oval leaves. The same native names are applied to both forms.

Illustrative specimens from Antipolo, Rizal Province, Luzon, June, March, 1915, there known as *guyong-guyong* (*Merrill: Species Blancoanae Nos. 851, 929, 972*).

CALOPHYLLUM Linnaeus

Tovomita pentapetala Blanco Fl. Filip. (1837) 432 (sp. nov.); ed. 2 (1845) 301; ed. 3, 2 (1878) 194=**CALOPHYLLUM PENTAPETALUM (Blanco) comb. nov.**

This is exactly *Calophyllum amplexicaule* Choisy ex Planch. & Triana in Ann. Sci. Nat. IV 15 (1861) 281, which was described from a Philippine specimen, *Cuming 1212*, from Ilocos Norte Province, Luzon. Fernandez-Villar, on account of Blanco's erroneous description of the flowers as having five petals, placed it in *Ochrocarpus* as *Ochrocarpus blancoi* F.-Vill. Noviss. App. (1880) 17, which thus becomes a synonym of *Calophyllum pentapetalum*. The species is decidedly characteristic among our numerous species of *Calophyllum* and is widely distributed in the Ilocano provinces at low altitudes, extending southward to Pangasinan and Zambales Provinces. Numerous specimens bear the same native names as those cited by Blanco or cognate forms of them.

Illustrative specimens from San Fernando, Union Province, Luzon, *comm. R. Lete*, Feb. 22, 1916, there known as *pamittanguen* (*Merrill: Species Blancoanae No. 969*); Lepanto Subprovince, *comm. P. de la Peña* (*Merrill: Species Blancoanae No. 184*).

CALOPHYLLUM INOPHYLLUM Linn.; Blanco Fl. Filip. (1837) 612 (*inophillum*); ed. 2 (1845) 428; ed. 3, 2 (1879) 415, *t. 256*.

The Linnean species was correctly interpreted by Blanco. This tree is found along the seashore throughout the Philippines, being very generally known by its Spanish name *palo maria*, also as *dancalan*, *bitaog*, and other local names. It yields a valuable timber.

Illustrative specimen from Limay, Bataan Province, Luzon, December, 1915 (*Merrill: Species Blancoanae No. 936*).

Calophyllum apetalum Blanco Fl. Filip. ed. 2 (1845) 429; ed. 3, 2 (1879) 415, non Willd.=**CALOPHYLLUM KUNSTLERI** King.

Blanco's description as to the fruits, "Nuez de cuatro lados, que se abre por ellos," does not apply to *Calophyllum* and may be due to a mixture of specimens on the part of Blanco. The species, moreover, may not belong in *Calophyllum*, although reduced by Fernandez-Villar to *C. spectabile* Willd. On the whole Blanco's description applies better to *Calophyllum kunstleri* King than to any other species known to me.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 336*).

KAYEA Wallich

Plinia paniculata Blanco Fl. Filip. (1837) 423 (sp. nov.); ed. 2 (1845) 296; ed. 3, 2 (1878) 184=**KAYEA PANICULATA** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 29.

This species was erroneously reduced by Fernandez-Villar to *Kayea racemosa* Pl. & Tr., a species that does not extend to the Philippines. It is widely distributed at low and medium altitudes in the Archipelago.

Illustrative specimen from Lamao, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 895*).

GARCINIA Linnaeus

Cambogia binucao Blanco Fl. Filip. (1837) 434 (sp. nov.); ed. 2 (1845) 302; ed. 3, 2 (1878) 196=**GARCINIA BINUCAO** (Blanco) Choisy.

This species is widely distributed in the Philippines at low altitudes; it is commonly known to the Tagalogs as *binucao* and *bilucao*, from whence Blanco's specific name.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 89*).

Cambogia venulosa Blanco Fl. Filip. (1837) 435 (sp. nov.); ed. 2 (1845) 303; ed. 3, 2 (1878) 197=**GARCINIA VENULOSA** (Blanco) Choisy (*G. cornea* F.-Vill. non Linn., *G. blancoi* Pierre).

The species is decidedly characteristic and is widely distributed in the Philippines. The peculiar, fine longitudinal reticulations of the leaves are well indicated by Blanco in the phrase: "la página inferior llena de venillas que se dirigen acia el apice." The native names are not constant, those appearing on various specimens in the herbarium of the Bureau of Science being *taclang anac*, *bilucao*, *gatasan*, and others. It is doubtful whether

Garcinia cumingiana Pierre and *G. calleryi* Pierre are specifically distinct from *G. venulosa* Choisy.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 569*).

Stalagmitis ? cambogioides Blanco Fl. Filip. ed. 2 (1845) 301; ed. 3, 2 (1878) 195, non Murr.=? **GARCINIA DULCIS** (Roxb.) Kurz.

I have found no mention of this species in the Novissima Appendix, but it is almost certainly *Garcinia,* although perhaps not *Garcinia dulcis* Kurz. The description is not good and does not apply at all well to Kurz's species; at the present time, however, I can suggest no other possible reduction of the species. *Garcinia dulcis* is widely distributed in the Philippines, extending from northern Luzon to Palawan and Mindanao.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 881*).

Cambogia crassifolia Blanco Fl. Filip. (1845) 304 (sp. nov.); ed. 3, 2 (1878) 198=? **GARCINIA** sp.

Fernandez-Villar referred this to *Garcinia cowa* Roxb., a species that does not extend to the Philippines. Blanco described only the leaves, and these very briefly, stating further that it was a tree originating in Cebu, there known as *sadugan,* and yielding a substance similar to gambir having an agreeable odor; he apparently saw neither flowers nor fruits. An attempt to locate the species through the native name *sadugan* in Cebu brought in specimens of *Horsfieldia ardisiifolia* Warb., which does not at all conform to the leaf characters indicated by Blanco for his *Cambogia crassifolia.* There is no special reason for considering that it even belongs in the *Guttiferae.*

DIPTEROCARPACEAE

DIPTEROCARPUS Linnaeus

Mocanera grandiflora Blanco Fl. Filip. (1837) 451 (sp. nov.)=**DIPTEROCARPUS GRANDIFLORUS** Blanco op. cit. ed. 2 (1845) 314 (nom. nov.); ed, 3, 2 (1878) 218, *t. 263.*

This species is common and widely distributed in the Philippines, occurring in the primeval forest at low and medium altitudes. It is almost universally known as *apitong,* a name rarely applied to any other species, and *apitong* is the commercial name of the timber produced by this tree.

Illustrative specimen from Bataan Province, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 119*).

Mocanera verniciflua Blanco Fl. Filip. (1837) 540 (sp. nov.)=**DIPTEROCARPUS VERNICIFLUUS** Blanco op. cit. ed. 2 (1845) 314 (comb. nov.); ed. 3, 2 (1878) 217, *t. 183.*

This is of wide distribution in the Philippines, extending from northern Luzon to Mindanao and Palawan. It is almost universally known as *panao*, and this native name is rarely applied to any other species and then usually through error. *Dipterocarpus fulvus* Blume (1856) and *D. velutinus* Vidal (1886) are exact synonyms.

Illustrative specimen from Bataan Province, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 147*); Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 910*).

ANISOPTERA Korthals

Mocanera thurifera Blanco Fl. Filip. (1837) 446 (sp. nov.) = **Dipterocarpus thurifer** Blanco op. cit. ed. 2 (1845) 310 (comb. nov.); ed. 3, 2 (1878) 212, *t. 264* = **ANISOPTERA THURIFERA** (Blanco) Blume.

Mocanera mayapis Blanco Fl. Filip. (1837) 449 (sp. nov.) = **Dipterocarpus mayapis** Blanco op. cit. ed. 2 (1845) 310 (comb. nov.); ed. 3, 2 (1878) 212 = **ANISOPTERA THURIFERA** (Blanco) Blume.

This species is common and widely distributed in the Philippines at low altitudes, ascending in forests to 750 meters. There is no valid reason for considering *Mocanera mayapis* Blanco = *Dipterocarpus mayapis* Blanco other than a synonym of *Anisoptera thurifera* (Blanco) Blume. The most commonly used native names for the species are *mayapis* and *palosapis*.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 405*).

HOPEA Roxburgh

Mocanera plagata Blanco Fl. Filip. (1837) 447 (sp. nov.) = **Dipterocarpus plagatus** Blanco op. cit. ed. 2 (1845) 311 (comb. nov.); ed. 3, 2 (1878) 212 = **HOPEA PLAGATA (Blanco) Vidal.**

This valuable timber tree is widely distributed in the Philippines, being one of the characteristic species of the primeval forest at low and medium altitudes. It is commercially known as *yacal*, and its timber enters the Manila market in large quantities. Blanco's species was erroneously reduced by Fernandez-Villar to *Shorea reticulata* Thwaites, a species that does not extend to the Philippines.

Illustrative specimen from Rizal Province, Luzon, November, 1914, there known as *yacal* or *saplongan* (*Merrill: Species Blancoanae No. 109*).

SHOREA Roxburgh

Mocanera polysperma Blanco Fl. Filip. (1837) 448 (sp. nov.) = **Dipterocarpus polyspermus** Blanco op. cit. ed. 2 (1845) 312 (comb. nov.); ed. 3, 2 (1878) 213 = **SHOREA POLYSPERMA** (Blanco) Merr. (*Hopea tangili* Blume).

This valuable timber tree is widely distributed in the Philip-

pines, the commercial name of its timber being *tanguile*. Blanco's specific name does not apply, and his selection of the name was probably due to the fact that he had fruits of an entirely different plant. His description, otherwise, applies well to the species as interpreted, and there is no doubt as to the identity of the illustrative material with Blanco's plant.

Illustrative specimen from Limay, Bataan Province, Luzon, June, 1914, there known as *tanguile* (*Merrill: Species Blancoanae No. 85*).

Mocanera guiso Blanco Fl. Filip. (1837) 449 (sp. nov.) = **Dipterocarpus guiso** Blanco op. cit. ed. 2 (1845) 313 (comb. nov.); ed. 3, 2 (1878) 215 = **SHOREA GUISO** (Blanco) Blume Mus. Bot. Lugd. Bat. 2 (1856) 34.

Euphoria malaanonan Blanco Fl. Filip. (1837) 286 (sp. nov.) = **Euphoria ? Nephelium ?** Blanco op. cit. ed. 2 (1845) 200, ed. 3, 2 (1878) 9 = **SHOREA GUISO (Blanco) Blume.**

This species is common and widely distributed in the Philippines, occurring in primeval forests at low and medium altitudes. It is a valuable timber tree and the timber is commercially known as *guijo*, the local name of the tree being *guijo* or *guiso*. *Euphoria malaanonan* Blanco has long been a puzzle, but it is now perfectly clear that the species described by Blanco is *Shorea guiso* Blanco supplied with large spiny galls. Many specimens of this exist in the herbarium of the Bureau of Science, as it is very frequently secured by native collectors under the impression that the gall is a fruit. Blanco describes the "fruit" of *Euphoria malaanonan* as an ovoid pouch bristling with incurved processes which become hard and spine-like at maturity, an excellent description of the common gall on *Shorea guiso* Blume. He further states that the "fruit" contained nothing, the interior being devoured by insects, modified by the statement that in one he did find a single seed; in this he certainly was mistaken. In the second edition he repeated the description, considering it as possibly a *Euphoria*, possibly as a *Nephelium*. It is perfectly clear that he placed it in this group on account of the spiny galls resembling the fruits of certain species of *Nephelium*. Fernandez-Villar placed it as a synonym of *Shorea robusta* Gaertn., a species that does not extend to the Philippines. Blanco's *Euphoria malaanonan* has page priority over *Mocanera guiso*, the name-bringing synonym of *Shorea guiso* Blume, but it cannot be adopted in place of the latter as it is based on an abnormality; it is further invalidated by *Shorea malaanonan* Blume.

Illustrative specimen from Limay, Bataan Province, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 407*).

Dipterocarpus palosapis Blanco Fl. Filip. ed. 2 (1845) 312 (sp. nov.); ed. 3, 2 (1878) 214=**SHOREA PALOSAPIS** (Blanco) comb. nov. [*Hopea squamata* Turcz. in Bull. Soc. Nat. Mosc. 31[1] (1858) 239; *Shorea squamata* Dyer ex Vidal Rev. Pl. Vasc. Filip. (1886) 62].

Blanco's entire description consists of but three and one-half lines, and is, of course, very imperfect and inadequate. Some botanists might consider his name a *nomen nudum* or at least a *nomen subnudum,* yet there is no doubt as to the identity of the species he intended to describe. The species commonly known as *Shorea squamata* Dyer is the only representative of the entire family *Dipterocarpaceae* that has: "hojas * * * con dos estipulas anchas en la base," while Blanco's description otherwise applies; it is not, however, similar to *Dipterocarpus polyspermus* Blanco (=*Shorea polysperma* Merr.), to which Blanco compares it, except in size. Blanco's species was erroneously reduced by Fernandez-Villar to *Shorea floribunda* Kurz, a species that does not extend to the Philippines. It is common and widely distributed in the Philippines, the Tagalog name *palosapis,* cited by Blanco, properly belonging to *Anisoptera thurifera* Blume; the name *mayapis,* however, appears on thirteen different collections of *Shorea palosapis* as here interpreted.

Illustrative specimen from Samar, August, 1914, *comm. M. Oro* (*Merrill: Species Blancoanae No. 737*).

PARASHOREA Kurz

Mocanera malaanonan Blanco Fl. Filip. (1837) 858 (sp. nov.)=**Dipterocarpus malaanonan** Blanco op. cit. ed. 2 (1845) 312 (comb. nov); ed. 3, 2 (1878) 214=**PARASHOREA MALAANONAN** (Blanco) comb. nov. (*Parashorea plicata* Brandis, *Shorea malaanonan* Blume).

Fernandez-Villar enumerated this under Blume's name, *Shorea malaanonan* (Blanco) Blume, but no attempt was made to refer botanical material to the species until Mr. Rolfe and myself interpreted the species as being the same as *Shorea polita* Vidal; see Philip. Journ. Sci. 3 (1908) Bot. 115. I am now convinced that this interpretation was erroneous; that *Shorea polita* is a valid species entirely distinct from *Mocanera malaanonan* Blanco; and that Blanco's species is identical with the common and widely distributed Philippine *Parashorea plicata* Brandis. Among all the Philippine *Dipterocarpaceae, Parashorea plicata* Brandis is the only one that agrees with Blanco's description in the characters of the leaves, whitish beneath, which are further described as wide, pointed, and a "geme" (i. e., 15 to

18 cm) long, while the pericarp of the fruit is described as fragile. The description conforms to *Parashorea plicata*, and I have not the slightest hesitation in adjusting the synonymy. The native name cited by Blanco, *malaanonan*, is valueless in interpreting the species, as it is a made up one, literally "false anonang," *anonang*=*Cordia myxa* Linn., and, as used to-day, is very loosely applied, although I have specimens of *Parashorea plicata* Brandis from Laguna Province, Luzon, bearing this name.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, *comm. N. Catalan*, June 20, 1914, with the Tagalog name *malaanonang* (*Merrill: Species Blancoanae No. 1053*).

VATICA Linnaeus

VATICA MANGACHAPOI Blanco Fl. Filip. (1837) 401 (sp. nov.) = **Vatica apteranthera** Blanco op. cit. ed. 2 (1845) 281 (nom. nov.); ed. 3, 2 (1878) 156.

Vatica sinensis Blanco op. cit. 401; 280; 156 (*chinensis*), non J. F. Gmel. = ? **VATICA MANGACHAPOI** Blanco.

The correctness of this interpretation of *Vatica mangachapoi* Blanco is very doubtful, but I have followed Vidal, Brandis, and Foxworthy. It is to be noted that the name *mangachapoi* is apparently never applied to the species as here interpreted, but is used for *Hopea acuminata* Merr., *H. pierrei* Hance, and perhaps some other species. *Vatica sinensis* is said by Blanco to differ from *V. mangachapoi* in having the anthers winged, so that probably the plant he described under this name was not the same as his *V. apteranthera* (=*V. mangachapoi*). As to anthesis, *Vatica mangachapoi*, as here interpreted, produces flowers from December to June in the provinces near Manila, while Blanco indicates May for both species discussed above. Foxworthy has placed here also **Mocanera mangachapoi** Blanco Fl. Filip. (1837) 450 (sp. nov.) = **Dipterocarpus mangachapoi** Blanco op. cit. ed. 2 (1845) 313, ed. 3, 2 (1878) 216, but I believe this to be incorrect. Blanco cites the native names *mangachapoi* and *guisong dilao* (i. e., yellow guiso); forms of this name appear on specimens of the Philippine plant that have been referred to *Shorea balangeran* (Korth.) Dyer, such as *guisong madlao* and *guisoc amarillo* (amarillo Sp.=yellow). However, none of our numerous specimens of *Shorea balangeran* bear the other native name cited by Blanco, *mangachapoi*, and Blanco's description of the leaves as "membranaceas" does not apply to *S. balangeran*. The identity of the species may later be determined from special collections in Bulacan and Rizal with reference to the native names cited by Blanco, and I suspect that the species is

really a *Hopea*, or perhaps a *Shorea*, from the fact that the fruit is described as being "como en la especie *plagata*," i. e., *Hopea plagata* (Blanco) Vid.

Illustrative specimen from Bataan Province, Luzon, June, 1914 (*Merrill: Species Blancoanae No. 866*).

ELATINACEAE

BERGIA Linnaeus

Tillaea rubella Blanco Fl. Filip. (1837) 75 (sp. nov.); ed. 2 (1845) 56; ed. 3, 1 (1877) 106=**BERGIA AMMANNIOIDES** Roxb.

In this reduction I follow Fernandez-Villar, for I can see no reason for distinguishing the Philippine form from the Asiatic one. The species is of very local occurrence in the Philippines, growing as a weed in old rice lands at low altitudes in Luzon. It is similar to *Bergia serrata* Blanco (*B. glandulosa* Turcz.), from which it is distinguished by its shorter pedicels, somewhat smaller, more crowded flowers, and usually 3 or 5 instead of 10 stamens.

Illustrative specimens from Antipolo, Rizal Province, Luzon, March, 1915, June, 1916 (*Merrill: Species Blancoanae Nos. 886, 979*).

BERGIA SERRATA Blanco Fl. Filip. (1837) 387 (sp. nov.)=**Spergula serrata** Blanco op. cit. ed. 2 (1845) 271 (nom. nov.); ed. 3, 2 (1878) 140.

The first name is the correct one, and the species is identical with *Bergia glandulosa* Turcz. (1854), which was based on *Cuming 1058* from Luzon. It differs from *Bergia ammannioides* Roxb., to which it is very closely allied, in its longer pedicels, somewhat larger flowers, and 10 instead of 3 to 5 stamens. Blanco's description of the leaves as "sesiles, * * * abrazando al tallo" is not good, but otherwise the description, habitat, and time of flowering apply perfectly to the species as here interpreted, while no other Philippine plant known to me has the characters indicated by Blanco for his species. It was reduced by Fernandez-Villar to *Bergia verticillata* Willd.=*B. capensis* Linn., a species unknown from the Philippines and one to which Blanco's description does not apply. The species is widely distributed in Luzon at low and medium altitudes, but is of local occurrence; it grows in dried out rice paddies and in other similar habitats.

Illustrative specimen from Pasig, Rizal Province, Luzon (a topotype), growing in dried out rice paddies, December, 1914 (*Merrill: Species Blancoanae No. 723*).

BIXACEAE

BIXA Linnaeus

BIXA ORELLANA Linn.; Blanco Fl. Filip. (1837) 456; ed. 2 (1845) 317; ed. 3, 2 (1878) 221, *t. 231*.

The Linnean species was correctly interpreted by Blanco. It is common and widely distribtued in the Philippines in cultivation; introduced from Mexico at an early date. It is universally known as *achuete*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 350*).

FLACOURTIACEAE

PANGIUM Reinwardt

Hydnocarpus polyandra Blanco Fl. Filip. ed. 2 (1845) 445 (sp. nov.); ed. 3, 3 (1879) 200, *t. 391*=**PANGIUM EDULE** Reinw.

This species is widely distributed in the central and southern Philippines at low altitudes; it is generally known as *pangui*.

Illustrative specimen from Samar, April, 1914 (*Merrill: Species Blancoanae No. 18*).

SCOLOPIA Schreber

Banara racemosa Blanco Fl. Filip. (1837) 425 (sp. nov.)=**Flacourtia corollata** Blanco op. cit. ed. 2 (1845) 559 (nom. nov.); ed. 3, 3 (1879) 220, *t. 367*=**SCOLOPIA LUZONENSIS** (Presl) Warb.

Banara brevifolia Blanco Fl. Filip. ed. 1 (1837) 426 (sp. nov.)=**Flacourtia parvifolia** Blanco op. cit. ed. 2 (1845) 560 (nom. nov.); ed. 3, 3 (1879) 220=**SCOLOPIA LUZONENSIS** (Presl) Warb.

The first of the above was reduced by Fernandez-Villar to *Scolopia rhinanthera* Clos, a species not known from the Philippines; and the second to *Scolopia dasyanthera* Benn., which was described from Philippine material and is a synonym of *S. luzonensis* Warb. There is no doubt whatever as to the correctness of the reduction of *Banara racemosa* Blanco=*Flacourtia corollata* Blanco to *Scolopia luzonensis* Warb., and there is equally little doubt but that *Banara brevifolia* Blanco=*Flacourtia parvifolia* Blanco (*F. parviflora* in Index Kewensis) is merely a small-leaved form of the same species. It is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimens from Antipolo, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae Nos. 836, 911*).

FLACOURTIA Jussieu

Myroxylon decline Blanco Fl. Filip. (1837) 813 (*Miroxilum*) (sp. nov.)=**Stigmarota edulis** Blanco op. cit. ed. 2 (1845) 560 (nom. nov.); ed. 3, 3 (1879) 221=**FLACOURTIA INDICA** (Burm. f.) Merr. Interpret. Herb. Amb. (1917) 377 (*F. sepiaria* Roxb.).

This species is common and widely distributed at low and medium altitudes in Luzon, in open places and thickets. It is commonly known as *bitangol.*

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 there known as *bitangol* (*Merrill: Species Blancoanae No. 99*).

CASEARIA Jacquin

Anavinga fuliginosa Blanco Fl. Filip. (1837) 372 (sp. nov.) = **CASEARIA FULIGINOSA** Blanco op. cit. ed. 2 (1845) 262 (comb. nov.); ed. 3, 2 (1878) 123, *t. 90.*

This is apparently a valid species and is widely distributed in the Philippines at low and medium altitudes. It was erroneously reduced by Fernandez-Villar to the entirely different *Casearia grewiaefolia* Vent.

Illustrative specimen from Antipolo, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 860*).

Samyda trivalvis Blanco Fl. Filip. (1837) 374 (sp. nov.); ed. 2 (1845) 263; ed. 3, 2 (1878) 124 = **CASEARIA TRIVALVIS** (Blanco) comb. nov. [*Casearia solida* Merr. in Govt. Lab. Publ. (Philip.) 35 (1906) 46].

This species was erroneously reduced by Fernandez-Villar to *Casearia fragilis* Vent., a species of the Mascarene Islands, and one that does not extend to the Philippines. I can see no reason for considering *Samyda trivalvis* Blanco to be other than the recently described *Casearia solida* Merr., and I accordingly here accept Blanco's specific name for the form. *Samyda trivalvis* Blanco does not appear in Index Kewensis.

Illustrative specimens from Mount Maquiling, Laguna Province, Luzon, March, 1915, *comm. A. Villamil* (*Merrill: Species Blancoanae No. 893*); Mount Mariveles, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 901*).

Samyda serrulata Blanco Fl. Filip. (1837) 374, non Linn. = **Samyda pubescens** Blanco op. cit. ed. 2 (1845) 263; ed. 3, 2 (1878) 124, non Linn. = **CASEARIA CINEREA** Turcz.

Blanco's species was reduced by Fernandez-Villar to *Casearia tomentosa* Roxb., a species that is not known from the Philippines. *Casearia cinerea* Turcz. has been reduced to *C. grewiaefolia* Vent. and is certainly very closely allied to that species if not identical with it. It is widely distributed in Luzon at low and medium altitudes.

Illustrative specimen from Mount Batulao, Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 821*).

Laurus serrata Blanco Fl. Filip. (1837) 319 (sp. nov.); ed. 2 (1845) 224; ed. 3, 2 (1878) 55 (non *Casearia serrata* Macf.) = **CASEARIA CRENATA** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 99.

This species is widely distributed at low and medium altitudes in Luzon. Although Blanco's description is short and imperfect, there is no doubt as to the correctness of this reference of his species. It was reduced by Fernandez-Villar to *Casearia glomerata* Roxb., a species not known from the Philippines.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 584*).

PASSIFLORACEAE

ADENIA Forskal

Passiflora zucca Blanco Fl. Filip. (1837) 648 (sp. nov.) = **Modecca trilobata** Blanco op. cit. ed. 2 (1845) 452; ed. 3, 3 (1879) 52, non Roxb. = **ADENIA ZUCCA** (Blanco) comb. nov.

Passiflora parviflora Blanco Fl. Filip. (1837) 647, non Sw. = **Modecca ? parviflora** Blanco op. cit. ed. 2 (1845) 453; ed. 3, 3 (1879) 52, non G. Don = **ADENIA ZUCCA** (Blanco) **Merr.**

Passiflora coccinea Blanco Fl. Filip. (1837) 650 (sp. nov.), non Aubl., nec Banks = **Modecca ? coccinea** Blanco op. cit. ed. 2 (1845) 453 (comb. nov.); ed. 3, 3 (1879) 53 = **ADENIA ZUCCA** (Blanco) Merr. (*Adenia coccinea* Merr.).

This variable species is widely distributed in the Philippines at low and medium altitudes, commonly occurring in dry thickets. Among the three forms considered by Blanco I can see no reason for recognizing more than one species. *Passiflora zucca* and *Passiflora parviflora* are certainly the same species and represent the form with 3-lobed leaves; *Passiflora coccinea* is the commoner form in the Philippines, the leaves not lobed. Sometimes plants are found presenting only entire leaves, sometimes only 3-lobed leaves, but frequently both entire and 3-lobed leaves are found on the same branch. Of Blanco's species considered above, the first was reduced by Fernandez-Villar to *Modecca palmata* Lam., the second to *M. cardiophylla* Mast., and the third to *M. heterophylla* Blume, none of which is definitely known to occur in the Philippines.

Illustrative specimen from Lamao, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 892*).

PASSIFLORA Linnaeus

Passiflora minima Blanco Fl. Filip. (1837) 647, non Jacq. = **Passiflora serrulata** Blanco op. cit. ed. 2 (1845) 452, ed. 3, 3 (1879) 50, *t. 414* (as *P. laurifolia* Linn.), non Jacq. = **PASSIFLORA EDULIS** Sims.

Fernandez-Villar considered that Blanco was correct in his

reference of this to *Passiflora serrulata* Jacq., in the second edition of the Flora de Filipinas. A series of specimens from cultivated plants, collected in various parts of the Philippines, agree perfectly with Blanco's description, and also agree with material from tropical America determined as *Passiflora edulis* Sims. Pending a thorough revision of the genus, it seems best to refer the form Blanco described to Sims's species. It is only occasionally found in cultivation and is nowhere abundant in the Philippines.

Illustrative specimen from Baguio, Benguet Subprovince, Luzon, from cultivated specimens, October, 1916 (*Merrill: Species Blancoanae No. 987*).

CARICACEAE

CARICA Linnaeus

CARICA PAPAYA Linn.; Blanco Fl. Filip. (1837) 803; ed. 2 (1845) 553; ed. 3, 3 (1879) 212.

Carica hermaphrodita Blanco op. cit. 805 (sp. nov.); 554; 212=**CARICA PAPAYA** Linn.

The Linnean species was correctly interpreted by Blanco, the normal form with dioecious flowers. The form described by Blanco as *Carica hermaphrodita* bears small fruits from female or perfect flowers on the elongated staminate inflorescences, such plants otherwise resembling normal staminate ones. This form is rare, individual trees being occasionally found. The papaya was introduced into the Philippines at an early date by the Spaniards, is now common and widely distributed in the Archipelago, and in some localities is thoroughly naturalized.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 675*).

BEGONIACEAE

BEGONIA Linnaeus

Begonia capensis Blanco Fl. Filip. (1837) 724; ed. 2 (1845) 501; ed. 3, 3 (1879) 127, *t. 413*, non Linn. f.=**BEGONIA NIGRITARUM** Steud.

This species is widely distributed in the Philippines and presents considerable variation. Fernandez-Villar was correct in reducing Blanco's *Begonia capensis* to *Begonia rhombicarpa* A. DC. (1859), but Steudel's name (1821), based on *Acetosa nigritarum* Kamel, is the older. This species is still commonly known to the Tagalogs as *liñgat* and *piñgol bató*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 494*).

CACTACEAE

NOPALEA Salm-Dyck

Cactus opuntia Blanco Fl. Filip. (1837) 414; ed. 2 (1845) 288; ed. 3, 2 (1878) 171, non Linn.=NOPALEA COCHINELIFERA (Mill.) Salm-Dyck.

It is to be noted that Blanco's description reads: "Filam. mucho mas cortos que la corola," which is a true *Opunta* character, but not true of *Nopalea*. Blanco's statement may have been made from an examination of true *Opunta* specimens or may have been copied from some previous description of the Linnean *Cactus opuntia*. At any rate no specimen of true *Opuntia* has ever been found in the Philippines, while *Nopalea* is decidedly common in some regions, both cultivated and wild. I follow Fernandez-Villar in the reduction of Blanco's species and believe that he was correct in spite of Blanco's description of the filaments to the contrary.

Illustrative specimen from San Juan del Monte, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 139*).

CEREUS Haworth

Cactus pitajaya Blanco Fl. Filip. ed. 2 (1845) 289; ed. 3, 2 (1878) 172, *t. 324*, non Jacq.=CEREUS TRIANGULARIS Mill.

Blanco's conception of *Cactus pitajaya* Jacq., is the well-known *Cereus triangularis* Mill. The reduction was made by Fernandez-Villar. The species is now uncommon in cultivation in Manila and in a few of the larger towns of the Philippines.

Illustrative specimen from cultivated plants, Manila, Luzon, July, 1916 (*Merrill: Species Blancoanae No. 1011*).

THYMELAEACEAE

PHALERIA Jack

Dais laurifolia Blanco Fl. Filip. (1837) 375; ed. 2 (1845) 263; ed. 3, 2 (1878) 125, non Jacq.=PHALERIA PERROTTETIANA (Decne.) F.-Vill.

This species is widely distributed in the Philippines, growing in forests at low and medium altitudes. It differs from *Phaleria cumingii* F.-Vill. notably in its larger leaves and pubescent flowers. Blanco's description, as to size of leaves and number of flowers, agrees with *Phaleria perrottetiana* and not with *P. cumingii* F.-Vill.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 74*).

WIKSTROEMIA Endlicher

Daphne aquilaria Blanco Fl. Filip. (1837) 310 (sp. nov.); ed. 2 (1845) 216; ed. 3, 2 (1878) 39=**WIKSTROEMIA INDICA** (Linn.) C. A. Mey. (*W. viridiflora* C. A. Mey., *Daphne cannabina* Lour.).

Fernandez-Villar reduced Blanco's species to *Wikstroemia ovata* C. A. Mey., with which it has little in common; Vidal, however, states that *Wikstroemia ovata* F.-Vill., non Mey., is *W. viridiflora* Mey. Blanco's description is an excellent one for this coastal shrub and applies unmistakably to *Wikstroemia viridiflora* Mey., which in turn is probably the same as *W. indica* (Linn.) Mey. The type of *Daphne indica* Linn. was from near Whampoa, southern China, but Meyer seems to have interpreted it largely from Polynesian specimens.

Illustrative specimen from Burgos, Ilocos Sur Province, Luzon, near the seashore, November 23, 1916 (*Merrill: Species Blancoanae No. 990*).

Daphne indica Blanco Fl. Filip. (1837) 309; ed. 2 (1845) 215; ed. 3, 2 (1878) 38, non Linn.=**WIKSTROEMIA OVATA** C. A. Mey.

Daphne foetida Blanco op. cit. 308 (*phaetida*); 214; 37, non Linn.=**WIKSTROEMIA OVATA** C. A. Mey.

Fernandez-Villar considered that Blanco correctly interpreted the Linnean *Daphne indica=Wikstroemia indica* Mey and reduced to it Blanco's *Daphne foetida*. Both of Blanco's species, however, are manifestly *Wikstroemia ovata* Mey., a species based on Philippine material.

Illustrative specimen from Bauang, Batangas Province, Luzon, February, 1915, there known as *salago* (*Merrill: Species Blancoanae No. 801*).

ELAEAGNACEAE

ELAEAGNUS Linnaeus

Elaeagnus angustifolia Blanco Fl. Filip. (1837) 74; ed. 2 (1845) 53; ed. 3, 1 (1877) 100, non Linn.=**ELAEAGNUS PHILIPPENSIS** Perr. Mém. Soc. Linn. Paris 3 (1824) 114 (*E. perrottetii* Schlecht., *E. cumingii* Schlecht.).

This species is widely distributed in the Philippines at low altitudes; reduced by some authors to *E. latifolia* Linn. It is commonly known as *alingaro*.

Illustrative specimen from Los Baños, Laguna Province, Luzon, May, 1914, *comm. F. C. Gates* and *N. Catalan* (*Merrill: Species Blancoanae No. 26*).

LYTHRACEAE

ROTALA Linnaeus

Ammannia monoflora Blanco Fl. Filip. (1837) 64 (sp. nov.)=**Ammannia ramosior** Linn.; Blanco op. cit. ed. 2 (1845) 46; ed. 3, 1 (1877) 86=**ROTALA RAMOSIOR** (Linn.) Koehne.

Ammannia pentandra Llanos Frag. Pl. Filip. (1851) 49; F.-Vill. & Naves Blanco Fl. Filip. ed. 3, 4[1] (1880) 36, non Blume, nec Roxb.=**ROTALA RAMOSIOR** (Linn.) Koehne.

Blanco's species was reduced by Fernandez-Villar to *Ammania peploides* Spreng.=*Rotala indica* Koehne, and this reduction I considered as apparently correct in my previous paper on Blanco's species. However, Blanco's description does not apply to *Rotala indica* Koehne, but does apply to *R. ramosior* Koehne; both species are not uncommon in open wet places about Manila and both are widely distributed in the Philippines. *Ammannia pentandra* Llanos was considered by Fernandez-Villar to be the same as *A. pentandra* Roxb.=*Rotala leptopetala* Koehne. I consider it, however, to be the same as *Rotala ramosior* Koehne. *Rotala ramosior* Koehne was undoubtedly introduced into the Philippines from Mexico through the medium of the Acapulco-Manila galleons.

Illustrative specimens from Manila, Luzon, October, November, 1914 (*Merrill: Species Blancoanae Nos. 426, 752*).

AMMANNIA Linnaeus

Celosia nana Blanco Fl. Filip. (1837) 192 (sp. nov.)=**Ammannia debilis** Blanco op. cit. ed. 2 (1845) 46 (nom. nov.); ed. 3, 1 (1877) 86, non Ait.=**AMMANNIA BACCIFERA** Linn.

Ammannia aegyptiaca Llanos Frag. Pl. Filip. (1851) 51; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 37, non Willd.=**AMMANNIA BACCIFERA** Linn.

Ammannia octandra (?) Llanos Frag. Pl. Filip. (1851) 50; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 37, non Linn.=**AMMANNIA BACCIFERA** Linn.

I can see no reason for considering that any of the descriptions listed above apply to other than the common and widely distributed *Ammannia baccifera* Linnaeus, which is a very common weed in low wet lands in the Philippines. The first two reductions follow Fernandez-Villar, but he considered *Ammannia octandra* Llanos to represent the Linnean species.

Illustrative specimens from Manila, Luzon, October, November, 1913 (*Merrill: Species Blancoanae Nos. 425, 775*).

PEMPHIS Forster

Pemphis setosa Blanco Fl. Filip. (1837) 410 (sp. nov.); ed. 2 (1845) 285; ed. 3, 2 (1878) 164=**PEMPHIS ACIDULA** Forst.

A characteristic species found throughout the Philippines along the seashore.

Illustrative specimen from Tayabas Province, Luzon, April, 1913 (*Merrill: Species Blancoanae No. 58*).

LAGERSTROEMIA Linnaeus

LAGERSTROEMIA INDICA Linn.; Blanco Fl. Filip. (1837) 454; ed. 2 (1845) 316; ed. 3, 2 (1878) 219, *t. 207*.

This species occurs in the Philippines only as an introduced and cultivated plant. It was certainly introduced by the Spaniards, as it is generally known by a name of Spanish origin, *melindres*. Blanco certainly correctly interpreted the Linnean species.

Illustrative specimen from Los Baños, Laguna Province, Luzon, July, 1914, *comm. E. Quisumbing* (*Merrill: Species Blancoanae No. 37*).

Munchausia speciosa Linn.; Blanco Fl. Filip. (1837) 611; ed. 2 (1845) 427; ed. 3, 2 (1879) 413, *t. 314*=**LAGERSTROEMIA SPECIOSA** (Linn.) Pers.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the Philippines, its nearly universal native name being *banabá*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 377*).

LAWSONIA Linnaeus

LAWSONIA INERMIS Linn.; Blanco Fl. Filip. (1837) 294; ed. 2 (1845) 206; ed. 3, 2 (1878) 21, *t. 108*.

The Linnean species was correctly interpreted by Blanco. It is universally known in the Philippines by its Spanish name *cinamomo*, indicating its introduction into the Archipelago after the arrival of the Spaniards. It is rarely found outside of cultivation.

Illustrative specimen from Manila, Luzon, April 20, 1914 (*Merrill: Species Blancoanae No. 241*).

SONNERATIACEAE

SONNERATIA Linnaeus f.

Sonneratia pagatpat Blanco Fl. Filip. (1837) 424; ed. 2 (1845) 296; ed. 3, 2 (1878) 186, *t. 175 bis*=**SONNERATIA CASEOLARIS** (Linn.) Engl. (*S. acida* Linn. f.).

This species is generally known in the Philippines, in most dialects, as *pagatpat*, and occurs throughout the Archipelago along muddy shores and tidal streams.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 215*).

CRYPTERONIA Blume

Quilamum luteum Blanco Fl. Filip. (1837) 851 (gen. et sp. nov.); ed. 2 (1845) 136; ed. 3, 1 (1877) 245=**CRYPTERONIA PANICULATA** Blume (*C. lutea* Blume).

This species is widely distributed in Luzon at low and medium altitudes. Blanco's type was manifestly the pistillate form of the species, "filam. del largo del caliz." The form distributed under number 330, below, is the staminate one.

Illustrative specimen from Antipolo, Rizal Province, Luzon, February, 1914 (*Merrill: Species Blancoanae No. 330*).

PUNICACEAE

PUNICA Linnaeus

PUNICA GRANATUM Linn.; Blanco Fl. Filip. (1837) 422; ed. 2 (1845) 295; ed. 3, 2 (1878) 184, *t. 211*.

The Linnean species was correctly interpreted by Blanco. It is generally cultivated on a small scale and will probably be found in most towns in the Philippines. It is universally known by its Spanish name, *granada*, and was certainly introduced by the Spaniards.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 783*).

LECYTHIDACEAE

BARRINGTONIA Linnaeus

Barringtonia speciosa Forst.; Blanco Fl. Filip. (1837) 533; ed. 2 (1845) 373; ed. 3, 2 (1879) 325, *t. 305*=**BARRINGTONIA ASIATICA** (Linn.) Kurz.

This species is widely distributed in the Philippines along the seashore, but does not occur inland. The type of *Mammea asiatica* Linn. Sp. Pl. (1753) 512 was a Javan specimen, collected by Osbeck, and the original description certainly applies to the plant usually called *Barringtonia speciosa* Forst. It is commonly known as *botong*.

Illustrative specimen from the seashore, Pasay, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 854*).

Barringtonia stravadium Blanco Fl. Filip. (1837) 533 (sp. nov.)=**BARRINGTONIA RACEMOSA** (Linn.) Blume; Blanco op. cit. ed. 2 (1845) 373; ed. 3, 2 (1879) 326, *t. 240*.

The form that Blanco described as a new species in the first

edition of his Flora de Filipinas he correctly reduced in the second edition to the widely distributed *Barringtonia racemosa* Blume. The species occurs throughout the Philippines along small streams and in thickets near the sea, never extending far inland, and is commonly known as *putat*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 410*).

RHIZOPHORACEAE

CERIOPS Arnott

Rhizophora candel Blanco Fl. Filip. (1837) 396; ed. 2 (1845) 277; ed. 3, 2 (1878) 150, *t. 415*, non Linn.=**CERIOPS TAGAL** (Perr.) C. B. Rob. (*C. candolleana* Arn.).

Blanco's description applies unmistakably to *Ceriops*, and to the form now known as *C. tagal* C. B. Rob., which was originally described from Philippine specimens. It occurs along muddy shores throughout the Philippines.

Illustrative specimen from Laguimanoc, Tayabas Province, Luzon, March, 1917, here known as *tangal* (*Merrill: Species Blancoanae No. 1047*).

RHIZOPHORA Linnaeus

Rhizophora longissima Blanco Fl. Filip. (1837) 398 (sp. nov.); ed. 2 (1845) 278; ed. 3, 2 (1878) 151=**RHIZOPHORA MUCRONATA** Lam.

This species occurs with *Rhizophora candelaria* DC. (*R. conjugata*) and is widely distributed in the Philippines. It can be readily distinguished from that species by its long peduncles, which are several-flowered. In my previous paper on Blanco's species I followed Fernandez-Villar in reducing *Rhizophora longissima* Blanco to *R. conjugata* Linn., but Blanco's description of the inflorescence applies unmistakably to *Rhizophora mucronata* Lam. *Rhizophora longissima* Blanco is not listed in Index Kewensis.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 409*).

Rhizophora mangle Blanco Fl. Filip. (1837) 397; ed. 2 (1845) 278; ed. 3, 2 (1878) 151, *t. 135*, non Linn.=**RHIZOPHORA CANDELARIA** DC. (*R. conjugata* auct. non Linn.), *R. conjugata* Linn. being *Bruguiera conjugata* (Linn.) Merr. (*B. gymnorhiza* Lam.); see Merrill in Philip. Journ. Sci. 9 (1914) Bot. 118.

Fernandez-Villar reduced *Rhizophora mangle* Blanco, non Linn., to *R. mucronata* Lam., in which I followed him in my previous paper on Blanco's species. An examination of Blanco's description, however, shows conclusively that he described *R.*

candelaria DC., under the name *R. mangle*, and not *R. mucronata* Lam., as evidenced by the expression "Flores en número de dos, sobre un pedúnculo comun." The species occurs throughout the Philippines along muddy shores and tidal streams especially on the outside of the mangrove, and is locally known as *bacao* or *bacauan.*

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 365*).

CARALLIA Roxburgh

Bruguiera nemorosa Blanco Fl. Filip. ed. 2 (1845) 275 (sp. nov.); ed. 3, 2 (1878) 147=**CARALLIA INTEGERRIMA** DC.

This species is common and widely distributed in the Philippines, but is considered by King, Journ. As. Soc. Beng. **66**[2] (1877) 319, to be a synonym of the older *Carallia lucida* Roxb.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 262*).

BRUGUIERA Lamarck

Rhizophora tinctoria Blanco Fl. Filip. (1837) 394 (sp. nov.)=**Rhizophora gymnorhiza** Linn.; Blanco op. cit. ed. 2 (1845) 276; ed. 3, 2 (1878) 149=**BRUGUIERA CONJUGATA** (Linn.) Merr. in Philip. Journ. Sci. 9 (1914) Bot. 118 (*Bruguiera gymnorhiza* Lam.).

The Linnean *Rhizophora conjugata* is the species usually called *Bruguiera gymnorhiza* (L.) Lam., but *R. conjugata* has priority; see Merrill, l. c., for a discussion of the synonymy. The species is found along tidal streams and muddy shores throughout the Philippines, and the present reduction of Blanco's *Rhizophora tinctoria* is in agreement with Fernandez-Villar's treatment and of Blanco's own treatment of it in the second edition of his work.

Illustrative specimen from Lamao, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 899*).

Rhizophora polyandra Blanco Fl. Filip. (1837) 396 (sp. nov.); ed. 2 (1845) 277; ed. 3, 2 (1878) 150, *t. 415 bis*=**BRUGUIERA SEXANGULA** (Lour.) Poir. (*B. eriopetala* W. & A.).

Rhizophora plicata Blanco op. cit. 398 (sp. nov.); 279; 152=**BRUGUIERA SEXANGULA** (Lour.) Poir. (*B. eriopetala* W. & A.).

Bruguiera sexangula (Lour.) Poir. is interpreted from the description as being identical with *B. eriopetala* W. & A., but is the older name. The species is widely distributed in the Philippines along muddy seashores, tidal streams, etc., and is one of the constituent species of the mangrove swamps. It is not always readily distinguished from *Bruguiera conjugata* Merr. Blanco's descriptions of both species cited above are short

and imperfect, but under *R. plicata* he definitely states that the petals are pilose on the margins and with a single cilia, and compares it to *R. polyandra* with the expression "de la cual tal vez es una simple variedad."

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 379*).

COMBRETACEAE

TERMINALIA Linnaeus

Terminalia latifolia Blanco Fl. Filip. (1837) 376, non Sw.=**Terminalia mauritiana** Blanco op. cit. ed. 2 (1845) 264; ed. 3, 2 (1878) 126, *t. 144*, non Lam.=**TERMINALIA CATAPPA** Linn.

This species is widely distributed in the Philippines along the seashore and is frequently planted as a shade tree inland. It is universally known as *talisay*.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 197*).

Gimbernatia calamansanai Blanco Fl. Filip. ed. 2 (1845) 266 (sp. nov.); ed. 3, 2 (1878) 129=**TERMINALIA CALAMANSANAI** (Blanco) Rolfe.

A species widely distributed in the Philippines at low and medium altitudes, commonly known to the Tagalogs as *calamansanai*.

Illustrative specimens from Rizal Province, Luzon, October, 1912, in flower; Butuan Subprovince, Mindanao, October, 1913, in fruit (*Merrill: Species Blancoanae Nos. 605,*472*, sterile).

Terminalia angustifolia Blanco Fl. Filip. (1837) 377, non Jacq.=**TERMINALIA EDULIS** Blanco op. cit. ed. 2 (1845) 265 (sp. nov.); ed. 3, 2 (1878) 127.

Terminalia edulis Blanco is a valid species, *T. mollis* (Presl) Rolfe being a synonym. It is a very large tree and of wide distribution in the Philippines at low and medium altitudes. It is universally known as *calumpit*.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, there known as *calumpit* (*Merrill: Species Blancoanae No. 812*).

Gnidia oppositifolia Blanco Fl. Filip. (1837) 299; ed. 2 (1845) 208; ed. 3, 2 (1878) 25, non Linn.=**TERMINALIA POLYANTHA** Presl.

Fernandez-Villar referred this to *Combretum wallichii* DC., a species that does not extend to the Philippines, and one to which Blanco's description does not conform. After considerable study of the description, I am convinced that Blanco had before him a form of *Terminalia polyantha* Presl, and have ac-

* this protolog is intended for No. 742, as No. 472 is Hyptis capitata Jacq. J. M. Greenman June 2 '924

cordingly reduced *Gnidia oppositifolia* Blanco to Presl's species. The leaves, however, are usually alternate, although in some specimens they are sub-opposite. It is represented in our collections from Angat, the region where *Gnidia oppositifolia* was observed by Blanco. *Gnidia philippinensis* Meissn. is a synonym.

Illustrative specimen from Nueva Ecija Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 1010*).

Bucida comintana Blanco Fl. Filip. (1837) 856 (sp. nov.); ed. 2 (1845) 265; ed. 3, 2 (1878) 128=**TERMINALIA COMINTANA** (Blanco) Merr. in Philip. Journ. Sci. 4 (1909) Bot. 300.

This species was erroneously reduced by Fernandez-Villar to *Terminalia chebula* Retz., a species that does not extend to the Philippines. A synonym of it is *Terminalia multiflora* Merr. in Govt. Lab. Publ. (Philip.) 17 (1904) 34, based on material from Luzon. Blanco's specific name *comintana* was taken from the old name of Batangas Province. The species is still known in Batangas as *dinglas*, the native name cited by Blanco, and this name is also used for the species in some other provinces.

Illustrative specimens from Angat, Bulacan Province, December, 1914 (*Merrill: Species Blancoanae No. 757*); Batangas Province (*Merrill: Species Blancoanae No. 780*); Rizal Province, Luzon, (*Merrill: Species Blancoanae No. 918*).

COMBRETUM Linnaeus

Combretum distillatorium Blanco Fl. Filip. (1837) 295 (sp. nov.)=**Combretum laxum** Blanco op. cit. ed. 2 (1845) 206; ed. 3, 2 (1878) 22, non Aubl., nec aliorum=**COMBRETUM SQUAMOSUM** Roxb.

This species is widely distributed in the Philippines at low and medium altitudes. Blanco's species was erroneously reduced by Fernandez-Villar to *Combretum ovalifolium* Roxb., a species that does not extend to the Philippines.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 847*).

QUISQUALIS Linnaeus

QUISQUALIS INDICA Linn.; Blanco Fl. Filip. (1837) 361=**Quisqualis Spinosa** Blanco op. cit. ed. 2 (1845) 254 (sp. nov.); 3, 2 (1878) 109, *t. 133*.

The plant that Blanco correctly referred to *Quisqualis indica* in the first edition of his Flora de Filipinas he described as a new species in the second edition. Fernandez-Villar erred in reducing it to *Quisqualis malabarica* Bedd., a species that does not extend to the Philippines. It is common and widely distributed in the Archipelago. It is commonly known as *niog-niogan* and as *tañgúlon*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blacoanae No. 582*).

LUMNITZERA Willdenow

Petaloma coccinea Blanco Fl. Filip. (1837) 345 (sp. nov.); ed. 2 (1845) 240; ed. 3, 2 (1878) 83=**LUMNITZERA LITTOREA** (Jack) Voigt (*L. coccinea* W. & A., *L. purpurea* Presl).

This characteristic species is found throughout the Philippines along the seashore.

Illustrative specimen from Tayabas Province, Luzon, April, 1913 (*Merrill: Species Blancoanae No. 521*).

Petaloma alba Blanco Fl. Filip. (1837) 344 (sp. nov.); ed. 2 (1845) 240; ed. 3, 2 (1878) 82, *t. 126*=**LUMNITZERA RACEMOSA** Willd.

The species as it occurs about Manila Bay is a small shrub rarely over 3 meters high, frequently less than 1 meter high. It is known to the Tagalogs as *culasi.*

Illustrative specimen from Maricaban, Rizal Province, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 303*).

MYRTACEAE

PSIDIUM Linnaeus

Psidium aromaticum Blanco Fl. Filip. (1837) 417, non Aubl.=**Psidium pyriferum** Linn.; Blanco op. cit. ed. 2 (1845) 292; ed. 3, 2 (1878) 178, *t. 48*=**PSIDIUM GUAJAVA** Linn.

The guava was introduced from Mexico at an early date by the Spaniards. It is now very abundant and widely distributed in the settled areas of the Archipelago and is thoroughly naturalized. It is commonly known as *bayabas.* The fossil leaves from volcanic tuff formations at Guadalupe, Mandaloyon, etc., referred by Blanco to this species, were certainly wrongly identified by him.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 11*).

DECASPERMUM Forster

Legnotis lanceolata Blanco Fl. Filip. (1837) 445 (sp. nov.)=**Metrosideros pictipetala** Blanco op. cit. ed. 2 (1845) 295 (nom. nov.); ed. 3, 2 (1878) 183=**DECASPERMUM FRUTICOSUM** Forst. (*D. paniculatum* Kurz).

Fernandez-Villar reduced *Metrosideros pictipetala* Blanco to *Metrosideros vera* Rumph., which can hardly be correct. As pointed out by C. B. Robinson, Philip. Journ. Sci. 4 (1909) Bot. 337, the identification of Blanco's species with *Decaspermum paniculatum* is fairly probable. The name *Legnotis lanceolata*

does not appear in Index Kewensis, and Fernandez-Villar appears to have overlooked it in compiling the Novissima Appendix to the third edition of Blanco's Flora de Filipinas. The species presents considerable variation and is very widely distributed in the Philippines; see Merrill, Interpret. Herb. Amb. (1917) 392.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 311*).

Myrtus communis Blanco Fl. Filip. (1837) 422; ed. 2 (1845) 295; ed. 3, 2 (1878) 182 non Linn.=**DECASPERMUM BLANCOI** Vid. Phan. Cuming. Philip. (1885) 112, 172.

This species is of rather wide distribution in the Philippines, Blanco's material being from Angat.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 568*).

EUGENIA Linnaeus

Eugenia jambos Blanco Fl. Filip. (1837) 416; ed. 2 (1845) 290 (*yambos*); ed. 3, 2 (1878) 175 (*yambos*), non Linn.=**EUGENIA JAVANICA** Lam.

This species is widely distributed in the Philippines at low altitudes in cultivation, but is not found wild. It is certainly of prehistoric introduction into the Archipelago and a purposely introduced species. The pink, turbinate, fleshy fruits are edible; the species is known in the region about Manila as *macupa*.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No 616*).

Calyptranthes jambolana Willd.; Blanco Fl. Filip. (1837) 418=**Syzygium jambolanum** DC.; Blanco op. cit. ed. 2 (1845) 293 (*Syzigium jambulanum*); ed. 3, 2 (1878) 180, *t. 174*=**EUGENIA CUMINI** (Linn.) Merr. Interpret. Herb. Amb. (1917) 394 (*Eugenia jambolana* Lam.).

This species is common and widely distributed in the Philippines, undoubtedly introduced although thoroughly naturalized. *Eugenia djouat* Perr., described from Philippine material, is an exact synonym. It is widely known as *duhat*.

Illustrative specimen from Manila, Luzon, March, 1911 (*Merrill: Species Blancoanae No. 288*).

Calyptranthes makal Blanco Fl. Filip. (1837) 419, non Raeusch.=**Calyptranthes zuzygium** Blanco op. cit. ed. 2 (1845) 293; ed. 3, 2 (1878) 179, non Sw.=**EUGENIA CLAUSA** C. B. Rob.

No new species was intended by Blanco in either case, but he attempted to refer the Philippine plant under observation to a previously described one. Fernandez-Villar reduced Blanco's species to *Eugenia operculata* Roxb., a species that does not

extend to the Philippines. Blanco's description does not apply in all particulars to the species as here interpreted, but I am of the opinion that this is the correct disposition of the plant he described. The native name *malaruhat* (literally "false *duhat;*" *duhat*=*Eugenia cumini* Merr.) is very loosely applied to numerous quite different species of *Eugenia;* in Rizal Province, that is the region immediately surrounding Manila, many of the natives insist that *Eugenia clausa* C. B. Rob. is the true *malaruhat*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, June 7, 1916, there known as *malaruhat* (*Merrill: Species Blancoanae No. 978*).

Eugenia montana Blanco Fl. Filip. (1837) 416 (sp. nov.); ed. 2 (1845) 291; ed. 3, 2 (1878) 175, *t. 145*, non DC.=**EUGENIA CALUBCOB** C. B. Rob.

This species is widely distributed in the Philippines and is very generally known as *calubcob* and cognate forms of this name. It was erroneously reduced by Fernandez-Villar to *Eugenia macrocarpa* Roxb., a species that does not extend to the Philippines, and one distinctly different from the form described by Blanco.

Illustrative specimens from Angat, Bulacan Province. Luzon, December, 1914, there known as *calubcob* (*Merrill: Species Blancoanae No. 703*) : Antipolo, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 888*).

Calyptranthes ramiflora Blanco Fl. Filip. (1837) 420 (sp. nov.) (non *Eugenia ramiflora* Miq.)=**Syzygium latifolium** Blanco op. cit. ed. 2 (1845) 294; ed. 3, 2 (1878) 181, non DC.=**EUGENIA SIMILIS** Merr.

There is very little doubt as to the correctness of this reduction. Blanco's description agrees closely, and the species is rather common and widely distributed in central Luzon. His specimens of this particular species were from Batangas Province, Luzon. It was reduced by Fernandez-Villar to *Eugenia bracteata* Roxb., var. *roxburghii* Duthie, but neither the species nor the variety extends to the Philippines. The present reduction of Blanco's species is in accord with Robinson's critical paper on Philippine Myrtaceae, Philip. Journ. Sci. 4 (1909) Bot. 386, 403.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914, there known as *malaruhat* (*mala*="false" and *duhat*=*Eugenia cumini* Merr.) (*Merrill: Species Blancoanae No. 669*).

Eugenia malaccensis Blanco Fl. Filip. (1837) 415; ed. 2 (1845) 290; ed. 3, 2 (1878) 173, *t. 170*, non Linn.=**EUGENIA JAMBOS** Linn. (*Jambosa vulgaris* DC.).

There is no doubt as to the correctness of this reduction. This species is fairly common in cultivation, is widely distributed in and about towns in the settled areas of the Philippines at low and medium altitudes, and is very generally known as *tampoi*. It is certainly an introduced plant in the Archipelago, but equally certainly of prehistoric introduction.

Illustrative specimens from Antipolo, Rizal Province, Luzon, January, December, 1915 (*Merrill: Species Blancoanae Nos. 809, 923*).

Eugenia bauanguica Blanco Fl. Filip. (1837) 416 (sp. nov.); ed. 2 (1845) 292; ed. 3, 2 (1878) 174 (*bauangica*)=**EUGENIA MALACCENSIS** Linn.

Blanco's description is entirely inadequate, yet I consider that there is little or no doubt as to the correctness of the present reduction of his species. Fernandez-Villar reduced it to *Eugenia laeta* Ham., which was certainly an error, as Hamilton's species does not extend to the Philippines. *Eugenia malaccensis* Linn. is certainly not a native of the Philippines, but was probably of prehistoric introduction into the Archipelago. It occurs as a scattered tree in cultivation only.

Illustrative specimens from San Pedro Macati, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 767*); Bulacan Province, Luzon (*Merrill: Species Blancoanae No. 1054*).

Myrtus manangquil Blanco Fl. Filip. (1837) 421 (sp. nov.)=**EUGENIA MANANQUIL** Blanco op. cit. ed. 2 (1845) 290; ed. 3, 2 (1878) 174.

Eugenia lobas Blanco Fl. Filip. (1837) 857 (sp. nov.)=**Eugenia cauliflora** Blanco op. cit. ed. 2 (1845) 291 (*canliflora*); ed. 3, 2 (1878) 177, non DC. nec. Miq.=? **EUGENIA MANANQUIL** Blanco.

Eugenia mananquil Blanco is a very characteristic valid species of wide distribution in the forested areas of the Philippines at low and medium altitudes. Fernandez-Villar reduced *Eugenia mananquil* Blanco to *Eugenia javanica* Lam., manifestly an erroneous reduction, and considered *Eugenia cauliflora* Blanco (*E. lobas* Blanco) as a distinct species but doubtfully identical with *Jambosa cauliflora* DC. The correctness of the present interpretation of *Eugenia mananquil* is certain, but the identity of *Eugenia lobas* is not so sure. It is the form interpreted and described by me as *Eugenia lobas* in Govt. Lab. Publ. (Philip.) **35** (1906) 48; see C. B. Robinson in Philip. Journ.

Sci. 4 (1909) Bot. 355, 402. The correct form of the Tagalog name is *mananquil,* not *manananquil.*

Illustrative specimen from Mount Arayat, Pampanga Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 717*).

Myrtus tripinnata Blanco Fl. Filip. (1837) 421 (sp. nov.) = **Myrtus subrubens** Blanco op. cit. ed. 2 (1845) 294 (nom. nov.); ed. 3, 2 (1878) 182 = **EUGENIA TRIPINNATA** (Blanco) C. B. Rob. in Philip. Journ. Sci. 4 (1909) Bot. 357.

Blanco's species was erroneously reduced by Fernandez-Villar to *Eugenia cymosa* Lam., a species that does not extend to the Philippines and one to which Blanco's description does not apply. The change of name in the second edition was doubtless due to the fact that Blanco realized his error in originally describing the leaves as "tres veces aladas", i. e., tripinnate, and this descriptive phrase is dropped from the description in the second edition. The species is widely distributed in Luzon and is also found in Mindoro and Mindanao.

Illustrative specimen from Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 889*).

Eugenia glandulosa Blanco Fl. Filip. (1837) 417 (sp. nov.); ed. 2 (1845) 291; ed. 3, 2 (1878) 176 = **EUGENIA** sp.?

Blanco's material was from Tala, a few miles north of Manila. His description is very imperfect, and the species cannot be definitely connected with actual specimens. As noted by Robinson, Philip. Journ. Sci. 4 (1909) Bot. 403, the only Philippine species at all answering the description is *Rhodomyrtus tomentosa* Hassk.; but the known distribution of this species makes this reduction an impossible one, while further, had Blanco seen specimens of *Rhodomyrtus tomentosa,* he almost certainly would have added its striking characters to his description, such as the venation of its leaves, its pubescence, etc. Fernandez-Villar made no reduction of this species.

MELASTOMATACEAE

MELASTOMA Linnaeus

Melastoma asperum Blanco Fl. Filip. (1837) 368, non Linn. = **Melastoma obvolutum** Blanco op. cit. ed. 2 (1845) 259; ed. 3, 2 (1878) 117, non Jack = **MELASTOMA POLYANTHUM** Blume.

Melastoma malabathricum Blanco Fl. Filip. (1837) 367 (*malabatrica*); ed. 2 (1845) 258; ed. 3, 2 (1878) 115, non Linn. = **MELASTOMA POLYANTHUM Blume.**

This species is common and widely distributed in the Philippines and presents considerable variation; as a result several

of the forms have been described under other specific names. Blanco's *Melastoma asperum=M. obvolutum* Blanco, non Jack, represents what I take to be fairly typical *Melastoma polyanthum* Blume, as I understand Blume's species. It is hardly *Melastoma malabathricum* Linn. to which Fernandez-Villar reduced it. Blanco's material was from Angat, but his description, as to the size of the leaves, applies, in our material, only to the smaller leaves. Fernandez-Villar reduced *Melastoma malabathricum* Blanco to *M. sanguineum* Sims. I can now see no reason for considering it other than *M. polyanthum* Blume.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 567*).

Melastoma tamonea Blanco Fl. Filip. (1837) 367, non Sm.=**Melastoma dodecandrum** Blanco op. cit. ed. 2 (1845) 258; ed. 3, 2 (1878) 116, non Roxb., nec aliorum=**MELASTOMA HOMOSTEGIUM** Naud.

Fernandez-Villar reduced this to *Melastoma imbricatum* Wall., a species that does not extend to the Philippines, while I previously expressed the opinion that it was certainly the same as *Melastoma polyanthum* Blume. However, Blanco describes his species as having 6-merous flowers, his specimens being from Panay. Specimens of *Melastoma* having 6-merous flowers conform with *Melastoma homostegium* Naud., the type of which is from the Philippines, *Cuming 927*, and has 6-merous flowers. Cogniaux reduced *Melastoma homostegium* Naud. to *Melastoma obvolutum* Jack. The type of Jack's species is not extant, but Mr. A. W. Hill informs me that all the material so-named in the Kew Herbarium, except my *No. 800*, which matches *Cuming 927*, and a specimen from Borneo, has 5-merous flowers.

OSBECKIA Linnaeus

Osbeckia multiflora Blanco Fl. Filip. (1837) 293, non Smith=**Osbeckia sinensis** Blanco ed. 2 (1845) 205; ed. 3, 2 (1878) 20, *t. 421*=**OSBECKIA CHINENSIS Linn.**

This species is of very wide distribution in the Philippines. Blanco's description applies to a small, unbranched form.

Illustrative specimens from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae Nos. 556, 1052*).

MEMECYLON Linnaeus

Memecylon parviflorum Blanco Fl. Filip. (1837) 300 (sp. nov.)=**Memecylon tinctorium** Blanco op. cit. ed. 2 (1845) 208 (nom. nov.); ed. 3, 2 (1878) 26, *t. 373*=**MEMECYLON OVATUM** Smith (*M. edule* Roxb. **var. *ovatum* C. B. Clarke**).

This species is of very wide distribution in the Philippines, but I am inclined to retain *Memecylon ovatum* as a species distinct from *M. edule* Roxb.; see Philip. Journ. Sci. 8 (1913) Bot. 215.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 581*).

MEMECYLON LANCEOLATUM Blanco Fl. Filip. (1837) 301 (sp. nov.); ed. 2 (1845) 209; ed. 3, 2 (1878) 26.

This species is common and widely distributed at low and medium altitudes in Luzon and is abundant in the regions from which Blanco secured most of his botanical material. *Memecylon pyrifolium* Presl, *M. cumingianum* Presl, and *M. clausiflorum* Naud., all based on Philippine material, are synonyms as I understand these forms as described; see Merrill in Philip. Journ. Sci. 8 (1913) Bot. 212.

Illustrative specimens from Rizal Province, Luzon, November, 1915, June, 1916, here known as *colis* or *culis* (*Merrill: Species Blancoanae Nos. 955, 975*).

OENOTHERACEAE

JUSSIAEA Linnaeus

Jussieua inclinata Blanco Fl. Filip. (1837) 366, non Linn. f= **Jussieua fluviatilis** Blume; Blanco op. cit. ed. 2 (1845) 257; ed. 3, 2 (1878) 114=**JUSSIAEA REPENS** Linn.

The form that Blanco erroneously referred to *Jussieua inclinata* Linn. f. in the first edition of his Flora de Filipinas, he correctly referred to *J. fluviatilis* Blume in the second edition. However, Blume's species is a synonym of *J. repens* Linn. The species is widely distributed at low altitudes in the Philippines, growing on muddy banks and in shallow fresh water.

Illustrative specimens from Lake Bay, Laguna Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 815*); Rizal Province, Luzon, November, 1915 (*Merrill: Species Blancoanae No. 921*).

Jussieua erecta Blanco Fl. Filip. (1837) 365; ed. 2 (1845) 257; ed. 3, 2 (1878) 114, *t. 322* (poor) non Linn.=**JUSSIAEA SUFFRUTICOSA** Linn.

This species is common and widely distributed in the Philippines at low altitudes in open wet places, possibly introduced.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 352*).

ARALIACEAE

ARALIA Linnaeus

ARALIA BIPINNATA Blanco Fl. Filip. (1837) 222 (sp. nov.); ed. 2 (1845) 157 (*bipimata*); ed. 3, 1 (1877) 282.

This species was later described by Presl from Philippine material as *Aralia hypoleuca* Presl, but Blanco's name is the older and should be retained. *Aralia bipinnata* Reinw. dates from 1856–57 and is a different species. Hemsley, Journ. Linn. Soc. Bot. **23** (1888) 338, has reduced *Aralia hypoleuca* Presl to *A. spinosa* Linn. *sensu latiore.* Blanco's description is very imperfect; but there is no doubt as to the correctness of the identification, as this is the only species of the genus that is known from Luzon.

Illustrative specimen from Baguio, Benguet Subprovince, Luzon, November, 1914, *comm. H. Sandkuhl* (*Merrill: Species Blancoanae No. 164*).

POLYSCIAS Forster

Aralia pendula Blanco Fl. Filip. (1837) 223 (sp. nov.); ed. 2 (1845) 157; ed. 3, 1 (1877) 283=**POLYSCIAS NODOSA** (Blume) Seem.

This species is widely distributed in the Philippines at low altitudes. In habit it is very characteristic, being unbranched, the long leaves and the ample inflorescences crowded at the summit of the trunk.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 113*).

SCHEFFLERA Forster

Polyscias digitata Blanco Fl. Filip. (1837) 224 (sp. nov.)=**Aralia ? octophylla** Blanco op. cit. ed. 2 (1845) 158 (*octophilla*); ed. 3, 1 (1877) 284, non Lour.=**SCHEFFLERA DIGITATA** (Blanco) comb. nov. (*Schefflera macrantha* Merr.).

Fernandez-Villar reduced this to *Heptapleurum rigidum* Seem., a species that does not extend to the Philippines, and one to which Blanco's description does not apply. Blanco's material was from Cebu, and he cites the Visayan name *tagima* for the species. Attempts to locate it under the native name in Cebu resulted in securing specimens of *Schefflera odorata* (Blanco) Merr. & Rolfe, a species that does not conform with the description of *Polyscias digitata.* The description conforms closely with *Schefflera macrantha* Merr., a species known from Mindanao and from Negros; the latter island is very near Cebu.

I have little hesitation in reducing the latter species and in adopting Blanco's specific name for it, as it is the only species among the very numerous Philippine representatives of the genus that conforms at all with Blanco's description.

Polyscias odorata Blanco Fl. Filip. (1837) 225 (sp. nov.) = **Paratropia crassa** Blanco op. cit. ed. 2 (1845) 158 (nom. nov.); ed. 3, 1 (1877) 285 = **SCHEFFLERA ODORATA** (Blanco) Merr. & Rolfe in Philip. Journ. Sci. 3 (1908) Bot. 117.

Polyscias obtusa Blanco Fl. Filip. (1837) 226 (sp. nov.) = **Paratropia obtusa** Blanco op. cit. ed. 2 (1845) 159 (nom. nov.); ed. 3, 1 (1877) 285 = **SCHEFFLERA ODORATA** (Blanco) Merr. & Rolfe.

Both of Blanco's species were reduced by Fernandez-Villar to *Heptapleurum venulosum* Seem., a species that does not extend to the Philippines. There is absolutely no doubt that a single species is represented by Blanco's descriptions. The species is widely distributed in the Philippines at low altitudes, often growing as a pseudo-epiphyte, i. e., rooting on decayed places on tree trunks. Its most general Tagalog name is *galamai amo*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 833*).

Nauclea digitata Blanco Fl. Filip. ed. 2 (1845) 102 (sp. nov.); ed. 3, 1 (1877) 188 (non *Schefflera digitata* Forst.) = **SCHEFFLERA BLANCOI** Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 109.

This species is widely distributed in Luzon, growing in forests at medium altitudes as a pseudo-epiphyte. It was reduced by Fernandez-Villar to *Heptapleurum cephalotes* C. B. Clarke, a species that does not extend to the Philippines.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 103*).

NOTHOPANAX Miquel

Aralia tripinnata Blanco Fl. Filip. (1837) 223 (sp. nov.) = **Panax fruticosum** Linn.; Blanco op. cit. ed. 2 (1845) 156 (*fruticossa*), ed. 3, 1 (1877) 281, *t. 78* = **NOTHOPANAX FRUTICOSUM** (Linn.) Miq.

The species that Blanco described as new in the first edition of his Flora de Filipinas he correctly reduced to *Panax fruticosum* Linn. in the second edition. The species is cultivated throughout the settled areas of the Philippines and is certainly an introduced plant in the Archipelago. Its common Tagalog name *papua* simply means "curly."

Illustrative specimen from Obando, Bulacan Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 850*).

UMBELLIFERAE

CENTELLA Linnaeus

Hydrocotyle asiatica Linn.; Blanco Fl. Filip. (1837) 212; ed. 2 (1845) 149; ed. 3, 1 (1877) 268=**CENTELLA ASIATICA** (Linn.) Urban.

The Linnean species was correctly interpreted by Blanco. It is very widely distributed in the settled areas of the Philippines, but is presumably an introduced plant. It is commonly known as *taquip cohól.*

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 574*).

FOENICULUM Linnaeus

Anethum foeniculum Linn.; Blanco Fl. Filip. (1837) 214; ed. 2 (1845) 150; ed. 3, 1 (1877) 270=**FOENICULUM VULGARE** Gaertn.

This reduction was made by Fernandez-Villar, and it is certainly the correct disposition of the form that Blanco described, he having interpreted the Linnean species correctly. The plant is very rarely found in cultivation in the Philippines to-day, occasionally a plant here and another there. It is now commonly known as *anis.*

CARUM Linnaeus

Ammi glaucifolium Blanco Fl. Filip. (1837) 213, non Linn.=**Daucus anisodorus** Blanco op. cit. ed. 2 (1845) 150 (sp. nov.); ed. 3, 1 (1877) 269=**CARUM COPTICUM** Benth.

Carum copticum Benth. seems to be the correct disposition of the form Blanco described. The species is of very local occurrence in the Philippines and is found only in cultivation. The native names cited by Blanco are *damoro* and *lamudio* and are still in use for this species.

Illustrative specimen from plants grown in Manila, the seeds of which were secured in Batangas Province, Luzon, June, 1917 (*Merrill: Species Blancoanae No. 1027*).

CORNACEAE

ALANGIUM Lamarck

Guettarda jasminiflora Blanco Fl. Filip. (1837) 722 (*jazminiflora*) (sp. nov.)=**Guettarda speciosa** Blanco op. cit. ed. 2 (1845) 499; ed. 3, 3 (1879) 124, non Linn.=**ALANGIUM CHINENSE** (Lour.) Rehder in Sargent Pl. Wils. 2 (1916) 552.

Alangium octopetalum Llanos ex Blanco Fl. Filip. ed. 2 (1845) 310 (sp. nov.); ed. 3, 2 (1878) 210=**ALANGIUM CHINENSE** (Lour.) Rehder in Sargent Pl. Wils. 2 (1916) 552.

Fernandez-Villar reduced *Alangium octopetalum* to *Alangium lamarckii* Thw.=*A. salviifolium* (Linn. f.) Wang., where it can-

not possibly belong. I am of the opinion that it is nothing but *Alangium chinense* (Lour.) Rehder, very poorly and imperfectly described, a species that is common in the vicinity of Calauan where the material on which Llanos's species was based was collected; Blanco definitely states that the description was by Llanos, not by himself. *Guettarda jasminiflora* Blanco is manifestly the same as *Alangium chinense* (Lour.) Rehder. It is widely distributed in Luzon at low and medium altitudes. *Alangium begoniifolium* Baill. is a synonym.

Illustrative specimens from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 73*); Mount Maquiling, Laguna Province, Luzon, *comm. F. W. Foxworthy,* September, 1916 (*Merrill: Species Blancoanae No. 1009*).

CLETHRACEAE

CLETHRA Linnaeus

Clethra alnifolia Blanco Fl. Filip. ed. 2 (1845) 259; ed. 3, 2 (1878) 117, non Linn.=**CLETHRA LANCIFOLIA** Turcz.

This species is widely distributed on the mountains of Luzon. Turczaninow's species was based on an erroneously localized specimen collected by Lobb, which was from Luzon, not from Singapore.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, May, 1914, *comm. N. Catalan* (*Merrill: Species Blancoanae No. 23*).

MYRSINACEAE

MAESA Forskal

Maesa membranacea Blanco Fl. Filip. ed. 2 (1845) 590; ed. 3, 1 (1877) 164, non A. DC.=**MAESA DENTICULATA** Mez.

Blanco's *Maesa membranacea* was reduced by Fernandez-Villar to *Maesa indica* A. DC. var. *coriacea* A. DC., but the Philippine form referred by A. de Candolle to *Maesa indica* has been considered by Mez as a distinct species, *Maesa laxa* Mez. Blanco's description, however, unmistakably applies to *Maesa denticulata* Mez, and the species is accordingly here so reduced. My previous reduction of *Maesa membranacea* Blanco to *Maesa cumingiana* Mez is entirely wrong, as Blanco distinctly describes his plant as having the flowers in axillary racemes. The species is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 701*).

Bassovia sylvatica Blanco Fl. Filip. ed. 2 (1845) 95 (*silvatica*); ed. 3, 1 (1877) 174, non Aubl.=**MAESA LAXA** Mez.

This species is common and widely distributed in the Philippines at low and medium altitudes. There is no doubt as to the correctness of this reduction of Blanco's species, as his description agrees closely with *Maesa laxa* Mez; *Bassovia sylvatica* Blanco was reduced by Fernandez-Villar to *Maesa indica* A. DC., but the Philippine form placed here by A. de Candolle has been segregated by Mez as a distinct species, *Maesa laxa* Mez.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 98*).

ARDISIA Swartz

Bladhia japonica Blanco Fl. Filip. (1837) 126, ed. 2 (1845) 90; ed. 3, 1 (1877) 164, non Thunb.=**ARDISIA PERROTTETIANA** A. DC.

Blanco's species was referred by Fernandez-Villar to *Ardisia pyramidalis* Pers.=*Ardisia serrata* (Cav.) Pers., probably on account of the statement of Blanco that the leaves are "como dos veces aserradas." The reason I do not now accept this reduction is that *Ardisia serrata* in the provinces near Manila flowers in March and April, while *A. perrottetiana* A. DC. frequently flowers in July and August, August being indicated by Blanco for his *Bladhia japonica*. Blanco's description applies to one quite as well as to the other.

Illustrative specimen from Mount Batulao, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 483*).

Willughbeia drupacea Blanco Fl. Filip. (1837) 132 (sp. nov.); ed. 2 (1845) 94; ed. 3, 1 (1877) 173, *t. 439*=**ARDISIA DRUPACEA** (Blanco) comb. nov. (*Ardisia boissieri* A. DC.).

Blanco's species was reduced by Fernandez-Villar to *Ardisia obovata* Blume=*Ardisia humilis* Valh var. *obovata* (Blume) Mez, a species that has been credited to the Philippines and one to which *Ardisia boissieri* is certainly very closely allied. *Ardisia drupacea* (*A. boissieri*) is an inland form and is consistently a tree, not a shrub. It should be noted that King & Gamble differ from Mez in interpreting *Ardisia humilis* Vahl and retain the name *Ardisia littoralis* Andr. (1811) for the Malay Peninsula form (including *A. obovata* Blume), with the comment that *Ardisia littoralis* Andr. "seems to be a coast shrub only." The species, whatever specific name be adopted for it, is widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Angat, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 60*).

Willughbeia multilocularis Blanco Fl. Filip. (1837) 131 (sp. nov.); ed. 2 (1845) 94; ed. 3, 1 (1877) 172, pro parte=**ARDISIA** sp.

Fernandez-Villar first thought that this was an apocynaceous plant, but did not suggest a reduction for it. Later, in the Addenda to the Novissima Appendix, he definitely referred it to *Garcinia ovalifolia* var. *spicata* Hook. f. Neither reduction is a possible one, as Blanco's description conforms neither to the *Apocynaceae* nor to the *Guttiferae.* I know of no Philippine species that combines the characters of *Willughbeia multilocularis* Blanco and am constrained to believe that the species was based on flowering specimens of one species, apparently an *Ardisia,* and fruiting specimens of an entirely different one. The description of the flowers and inflorescence conforms closely to *Ardisia,* perhaps *Ardisia boissieri* A. DC.=*A. drupacea* (Blanco) Merr. The native name *malabatoan* cited by Blanco is valueless in determining the identity of the species.

AEGICERAS Gaertner

AEGICERAS CORNICULATUM Blanco Fl. Filip. (1837) 79; ed. 2 (1845) 59; ed. 3, 1 (1877) 112, *t. 38.*

Blanco correctly interpreted *Rhizophora corniculata* Linn., and was correct in transferring the specific name to *Aegiceras.* The species is common along the seashore throughout the Philippines.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 508*).

EMBELIA Burman

Rhamnus lando Llanos Frag. Pl. Filip. (1851) 57 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 41=**EMBELIA PHILIPPINENSIS** A. DC.

Rhamnus lando was reduced by Fernandez-Villar to *Bridelia retusa* Muell.-Arg., a species that does not occur in the Philippines and one to which Llanos's description does not at all apply. In Index Kewensis it is entered under *Rhamnus* with the addition of "quid." The identification of *Rhamnus lando* with *Embelia philippinensis* A. DC. is certainly correct, as Llanos's description applies fully to *Embelia philippinensis;* the Tagalog name of de Candolle's species is *lando;* the older stems are spiny; the acid leaves are used by the natives as a substitute for vinegar; and the time of flowering in the provinces near Manila is that indicated by Llanos. Without the data given by Llanos as to the native name and uses of the plant, it is doubtful if the proper reduction of the species could have been effected.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *lando* (*Merrill: Species Blancoanae No. 732*).

PLUMBAGINACEAE

PLUMBAGO Linnaeus

Plumbago viscosa Blanco Fl. Filip. (1837) 78 (sp. nov.); ed. 2 (1845) 58; ed. 3, 1 (1877) 111=**PLUMBAGO ZEYLANICA** Linn.

The species is of wide distribution in the settled areas of the Philippines at low and medium altitudes, but is of rather local occurrence; it is undoubtedly an introduced plant in the Archipelago, although now thoroughly naturalized.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 479*).

SAPOTACEAE

BASSIA Linnaeus

Azaola betis Blanco Fl. Filip. (1837) 402 (gen. et sp. nov.); ed. 2 (1845) 281; ed. 3, 2 (1878) 157=**BASSIA BETIS** (Blanco) Merr. in Philip. Journ. Sci. 10 (1915) Bot. 56 (*Payena betis* F.-Vill., *Illipe betis* Merr.).

This endemic species is of wide distribution in the Philippines, occurring in the primeval forest, yielding a very valuable building timber, and universally known as *betis*, which is also the commercial name of its timber.

Illustrative specimen from Cavite Province, Luzon, April, 1915, there known as *betis* (*Merrill: Species Blancoanae No. 956*).

PALAQUIUM Blanco

Palaquium latifolium Blanco Fl. Filip. (1837) 404 (sp. nov.); ed. 2 (1845) 282; ed. 3, 2 (1878) 159=**PALAQUIUM PHILIPPENSE** (Perr.) C. B. Rob. in Philip. Journ. Sci. 3 (1908) Bot. 304.

Palaquium oleiferum Blanco op. cit. 405 (sp. nov.); 283; 160=**PALAQUIUM PHILIPPENSE** (Perr.) C. B. Rob.

From Blanco's descriptions *Palaquium latifolium* and *P. oleiferum* cannot be distinguished, the description of the former being fairly complete, and that of the latter much shorter, incomplete, and of the leaves and fruits only. The common Tagalog names for the species are *palac-palac* (from whence the generic name) and *alacac*, while the Ilocano name, as it appears on our specimens, is *araca* and *dapagan;* Blanco cites the Ilocano name *daracan* for his *Palaquium oleiferum.* The species is common and widely distributed in Luzon and Mindoro, at low and medium altitudes, generally growing in the primeval forest. Synonyms appear to be *Chrysophyllum macrophyllum* Desf. and *C. grandifolium* Steud., but the earliest valid specific name is that supplied by *Chrysophyllum philippense* Perr. in Mém. Soc. Linn. Paris 3 (1824) 109.

Illustrative specimens from Antipolo, Rizal Province, Luzon, December, 1914, June, 1915 (*Merrill: Species Blancoanae Nos. 662, 934*).

PALAQUIUM LANCEOLATUM Blanco Fl. Filip. (1837) 403 (sp. nov.); ed. 2 (1845) 282; ed. 3, 2 (1878) 159.

Blanco's species is apparently a valid one, but my first attempt to interpret it, Govt. Lab. Publ. (Philip.) 6 (1904) 15, was wrong, and the form I then referred to it Dubard has very correctly separated as a distinct species, *Palaquium merrillii* Dubard. But two collections, conforming to Blanco's description, have been received, and from this material *Palaquium lanceolatum* Blanco has been redescribed by me, Philip. Journ. Sci. 10 (1915) Bot. 62. *Palaquium lanceolatum* Blanco is the type of the genus.

ACHRAS Linnaeus

ACHRAS SAPOTA Linn.; Blanco Fl. Filip. (1837) 236; ed. 2 (1845) 165; ed. 3, 1 (1877) 298, *t. 85*.

The Linnean species was correctly interpreted by Blanco. It was introduced into the Philippines at an early date by the Spaniards and now is found in cultivation throughout the Archipelago; it is universally known as *chico*.

Illustrative specimen from Manila, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 492*).

LUCUMA Jussieu

Achras lucuma Blanco Fl. Filip. (1837) 237; ed. 2 (1845) 166; ed. 3, 1 (1877) 299, *t. 297*, non Ruiz & Pav.=LUCUMA MAMMOSA (Linn.) Gaertn.

This Mexican species was introduced into the Philippines by the Spaniards at an early date, but is now found in cultivation only sparingly and very locally. The fruits rarely enter the Manila market. It is known as *chico-mamey*.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 54*).

SIDEROXYLON Linnaeus

SIDEROXYLON DUCLITAN Blanco Fl. Filip. (1837) 129 (sp. nov.); ed. 2 (1845) 92; ed. 3, 1 (1877) 168.

Sideroxylon balitbitan Blanco Fl. Filip. (1837) 130 (sp. nov.); ed. 2 (1845) 92; ed. 3, 1 (1877) 169=SIDEROXYLON DUCLITAN Blanco.

There is no reason whatever for attempting to distinguish *Sideroxylon balitbitan* as a species distinct from *Sideroxylon duclitan* Blanco. Blanco's whole description consists merely of the statement that the leaves are wider than those of *duclitan*,

but in its floral and all other characters it cannot be distinguished from the latter. There is but a single species of the section to which *Sideroxylon duclitan* Blanco belongs known from the Philippines.

Illustrative specimen from Manila, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 1*).

MIMUSOPS Linnaeus

Mimusops erythroxylum Llanos in Anal. Soc. Esp. Hist. Nat. 2 (1873) 255, *t. 10;* F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 54, non Boj.=**MIMUSOPS PARVIFOLIA R. Br.**

This reduction follows Fernandez-Villar, and I am now of the opinion that this is the correct disposition of the widely distributed coastal form found in the Philippines, which has been confused with *Mimusops elengi* Linn. It is widely known as *bansalaguin.*

EBENACEAE

DIOSPYROS Linnaeus

Sapota nigra Blanco Fl. Filip. (1837) 409 (sp. nov.)=**Diospyros nigra** Blanco op. cit. ed. 2 (1845) 211, *t. 372* (nom. nov.); ed. 3, 2 (1878) 30=**DIOSPYROS EBENASTER** Retz.

This species was introduced from Mexico by the Spaniards and is nowhere abundant in the Archipelago to-day and is not spontaneous; Blanco was in error in considering it to be indigenous. It is still known by its Spanish name, of Mexican origin, *sapote negro.*

Illustrative specimen from Manila, Luzon, 1914 (*Merrill: Species Blancoanae No. 618*).

Diospyros kaki Blanco Fl. Filip. (1837) 302, non Linn.=**Diospyros embryopteris** Blanco op. cit. ed. 2 (1845) 209 (*embriopteris*); ed. 3, 2 (1878) 28, *t. 109*, non Pers.=**DIOSPYROS DISCOLOR** Willd. (*Cavanilla philippensis* Desr., *Diospyros philippensis* Gürke, non A. DC., *Diospyros blancoi* A. DC.).

This species is common and widely distributed in the Philippines, the tree usually known as *camagon*, yielding a valuable cabinet timber. The edible fruit is known as *mabolo* and is commonly sold in the Manila markets.

Illustrative specimen from Manila, Luzon, April, 1911 (*Merrill: Species Blancoanae No. 287*).

DIOSPYROS PILOSANTHERA Blanco Fl. Filip. (1837) 304 (sp. nov.); ed. 2 (1845) 211; ed. 3, 2 (1878) 31.

A characteristic endemic species of wide distribution in the Philippines at low and medium altitudes. Its universal Tagalog name is *bolongeta.*

Illustrative specimen from Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 820*).

DIOSPYROS MULTIFLORA Blanco Fl. Filip. (1837) 303 (sp. nov.) = **Diospyros lotus** (?) Blanco op. cit. ed. 2 (1845) 210; ed. 3, 2 (1878) 29, non Linn.

Blanco's specific name *multiflora* is valid for this species, for *Diospyros multiflora* Wall. Cat. (1831) No. 4144 is a *nomen nudum* and is, moreover, a synonym of *Diospyros lanceaefolia* Roxb. *Diospyros canomoi* A. DC. is an exact synonym of Blanco's species. The species is widely distributed in Luzon, and its fruits are used in stupefying or poisoning fish. Its common Tagalog name is *canomoi.*

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 536*).

Diospyros biflora Blanco Fl. Filip. (1837) 303 (sp. nov.); ed. 2 (1845) 210; ed. 3, 2 (1878) 28 = ? **DIOSPYROS MARITIMA** Blume.

A species of doubtful status other than that it is certainly a *Diospyros.* The native name *talang* and cognate forms of it are applied to various species of *Diospyros,* including *D. curranii* Merr., *D. mindanaensis* Merr., *D. ahernii* Merr., and even *D. pilosanthera* Blanco. It is suspected that the form Blanco described as *Diospyros biflora* is the same as *D. maritima* Blume, which, however, is almost universally known in the Philippines as *canomoi.*

DIOSPYROS KAKI Linn. f.; Blanco Fl. Filip. ed. 2 (1845) 211; ed. 3, 2 (1878) 29.

This was described by Blanco from fruits only originating in Majaijai, a town on the lower slopes of Mount Banajao, Laguna Province, Luzon, where it was apparently cultivated. His description conforms entirely with *Diospyros kaki* Linn. f., but the species is apparently no longer in cultivation in the Philippines.

Malacapai Blanco Fl. Filip. (1837) 302, ed. 2 (1845) 210; ed. 3, 2 (1878) 27 = **DIOSPYROS MALACAPAI** A. DC. Prodr. 8 (1844) 237 (type!).

I am unable to suggest a reduction of this very imperfectly described form, other than that it is a *Diospyros.* A. de Candolle made Blanco's description of *malacapai* the type of *Diospyros malacapai* A. DC. The Tagalog name *malatapi,* rather than *malacapai,* is exclusively applied in some parts of Luzon to *Alangium longiflorum* Merr., of the *Cornaceae,* but Blanco's short description applies unmistakably to *Diospyros.* The name is applied also to some species of *Diospyros,* but the characters of these do not conform to Blanco's description of *Malacapai.*

Cunalon Blanco Fl. Filip. (1837) 304; ed. 2 (1845) 212; ed. 3, 2 (1878) 31=**DIOSPYROS CUNALON** A. DC. Prodr. **8** (1844) 237 (type!).

A species of doubtful status, known only from Blanco's description. A. de Candolle made the description the basis of *Diospyros ? cunalon* A. DC., but while the status of the species is doubtful, it is certainly a *Diospyros*. Blanco's specimens were from Cebu, where the tree was known as *cunalon*. Specimens of *Diospyros ahernii* Merr. appear in our herbarium bearing the Visayan name *canalon*, but this species does not conform to Blanco's description, as the stamens are 16, all basal, not 8, of which 4 are basal and 4 inserted on the tube as Blanco describes them.

SYMPLOCACEAE

SYMPLOCOS Linnaeus

Guettarda polyandra Blanco Fl. Filip. ed. 2 (1845) 500 (sp. nov.); ed. 3, **3** (1879) 126=**SYMPLOCOS POLYANDRA** (Blanco) Brand in Engl. Pflanzenreich **6** (1901) 36, excl. syn. *S. racemosa, S. spicata, S. villarii, S. pseudo-spicata,* et descr.).

There is absolutely no doubt in my mind that Blanco's *Guettarda polyandra* is the species later described by Presl as *Carlea oblongifolia*=*Symplocos oblongifolia* Rolfe; Brand, l. c., 55. Fernandez-Villar reduced *Guettarda polyandra* to *Symplocos racemosa* Roxb., being correct as to the generic reduction, but wrong as to the species. Vidal erred in citing *Guettarda polyandra* Blanco as a synonym of his *Symplocos villarii*, but made the reduction with expressed doubt, while Brand erred in taking up Blanco's name as the oldest valid one for *Symplocos villarii* Vidal. Blanco's description, "Hojas enteras * * * flores en las ramas en espigas disticas," in *Symplocos* applies only to the species previously known as *S. oblongifolia* among all the Philippine forms. Widely distributed in the Philippines, and also occurring in Borneo.

Illustrative specimens from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 312*); Luzon (*Merrill: Species Blancoanae No. 661*).

OLEACEAE

JASMINUM Linnaeus

Mogorium aculeatum Blanco Fl. Filip. (1837) 9 (sp. nov.), ed. 2 (1845) 7; ed. 3, 1 (1877) 13, *t. 445*=**JASMINUM ACULEATUM** (Blanco) Walp. ex Hassk in Flora **47** (1864) 50; Merr. in Govt. Lab. (Philip.) Publ. **35** (1905) 76.

Blanco's species was reduced by Fernandez-Villar to *Jasmi-*

num marianum DC., but is apparently distinct. It is widely distributed in the Philippines at low altitudes.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 87*).

Nyctanthes sambac Linn.; Blanco Fl. Filip. (1837) 9; ed. 2 (1845) 6; ed. 3, 1 (1877) 12, *t.* 6=**JASMINUM SAMBAC** (Linn.) Ait.

This species is widely distributed in the Philippines in cultivation and is universally known in the Archipelago as *sampaguita*. Not naturalized and certainly a purposely introduced species. Blanco's description typifies *Jasminum blancoi* Hassk. in Flora 47 (1864) 49.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 88*).

SALVADORACEAE

AZIMA Lamarck

Azima nova Blanco Fl. Filip. (1837) 68; ed. 2 (1845) 49; ed. 3, 1 (1877) 91, non Gmel.=**AZIMA SARMENTOSA** Benth.

This may prove to be identical with the older *Azima tetracantha* Lam., a point that I am unable to determine at present. The species is locally abundant in dry thickets near tidal streams in the vicinity of Manila, and when fresh the crushed plant has a peculiar, offensive odor suggestive of that of the civet cat.

Illustrative specimen from Manila, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 505*).

LOGANIACEAE

GENIOSTOMA Forster

Tayotum nigrescens Blanco Fl. Filip. (1837) 105 (gen. et sp. nov.); ed. 2 (1845) 76; ed. 3, 1 (1877) 141=**GENIOSTOMA NIGRESCENS** (Blanco) comb. nov. (*G. philippinense* Merr.).

This species was reduced by Fernandez-Villar to *Norrisia malaccensis* Gardn. of the Malay Peninsula and Borneo, to which Blanco's description does not at all apply. There is no doubt, however, that *Tayotum* is identical with *Geniostoma*, and that *Tayotum nigrescens* Blanco is the species described by me as *Geniostoma philippinense*. The illustrative material distributed herewith, while apparently a form of *Geniostoma philippinense* Merr., differs from the type and from Blanco's description in having its leaves nearly or quite glabrous.

Illustrative specimen from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 878*).

STRYCHNOS Linnaeus

Ignatia amara Linn. f.; Blanco Fl. Filip. (1837) 82=**Strychnos philippensis** Blanco op. cit. ed. 2 (1845) 61 (sp. nov.); ed. 3, 1 (1877) 116=**STRYCHNOS IGNATII** Berg. Mat. Med. 1 (1778) 146.

Blanco correctly interpreted *Ignatia amara* Linn. f., which was published in 1781, in the first edition of his Flora de Filipinas, but for some reason described it as a new species in the second edition. The species is widely distributed in the central and southern Philippines but has not as yet been found in Luzon. It is a sylvan species of somewhat local occurrence, apparently being most abundant in Samar, and Samar seems to be the chief source of the commercial supply of the seeds. It is definitely known from the islands of Samar, Biliran, Leyte, and Mindanao, and has been reported from Masbate and Cebu. The fruits are globose, 10 to 12 cm in diameter, and each contains from 15 to 18 seeds embedded in very soft fleshy pulp. The pulp is almost exactly "luteus" of Saccardo's Chromotaxia, with a squash-like odor, and the fresh seeds are greenish straw-colored, smooth, with a satiny sheen, and shrink considerably in drying.

Illustrative specimen from Jaro, Leyte, October, 1914, *comm. C. A. Wenzel*, locally known as *igasud* (*Merrill: Species Blancoanae No. 631*).

BUDDLEIA Linnaeus

Buddleia virgata Blanco Fl. Filip. (1837) 57; ed. 2 (1845) 38; ed. 3, 1 (1877) 70, non Linn. f.=**BUDDLEIA ASIATICA** Lour.

This was reduced by Fernandez-Villar to *Buddleia neemda* Ham., which is a synonym of Loureiro's species. The only representative of the genus known in the Philippines, widely distributed, extending from sea level to an altitude of at least 1,800 meters.

Illustratve specimen from Baguio, Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 15*).

FAGRAEA Thunberg

Fagraea scholaris Blanco Fl. Filip. ed. 2 (1845) 93 (sp. nov.); ed. 3, 1 (1877) 171=**FAGRAEA RACEMOSA** Jack (*F. morindaefolia* Blume).

Blanco's species was reduced by Fernandez-Villar to *Fagraea cordifolia* Blume, a species that is not known to extend to the Philippines. It is unquestionably the widely distributed and common *Fagraea racemosa* Jack, a species that is found in forested regions at low and medium altitudes throughout the Philippines.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 163*).

GENTIANACEAE

EXACUM Linnaeus

Exacum albens Blanco Fl. Filip. (1837) 58; ed. 2 (1845) 39; ed. 3, 1 (1877) 71, *t. 202*, non Linn. f.=**EXACUM CHIRONIOIDES** Griseb.
Cobamba blancoi Azaola in Blanco Fl. Filip. ed. 2 (1845) 591 (sp. nov.); ed. 3, 2 (1878) 293=**EXACUM CHIRONIOIDES** Griseb.

Exacum albens Blanco was reduced by Fernandez-Villar, Novis. App. (1880) 136, to *Exacum chironioides* Griseb. Gen. Sp. Gent. (1839) 109, which was based on Philippine material; in this reduction he was undoubtedly correct. Hallier f., Beihefte Bot. Centralbl. 34[2] (1916) 42, has shown that the Malayan form is distinct from *Exacum tetragonum* Roxb., and has accepted *Exacum albens* Blanco (non Linn.) as the name for the former; *Exacum albens* Blanco is invalidated by *E. albens* Linn. *Cobamba blancoi* Azaola was reduced by Fernandez-Villar to *Canscora decussata* R. & S., following Llanos, but this is certainly incorrect for the latter species does not extend to the Philippines. The description is very imperfect, but so far as it goes it applies to *Exacum chironioides* Griseb., but to no other Philippine plant known to me. It is widely distributed in the Philippines, in rather wet grasslands, along streams, etc., in the provinces near Manila, flowering from April to September.

Illustrative specimen from Antipolo, Rizal Province, Luzon, August, 1913 (*Merrill: Species Blancoanae No. 261*).

CANSCORA Lamarck

Cobamba dichotoma Blanco Fl. Filip. (1837) 510 (gen. et sp. nov.); ed. 2 (1845) 355; ed. 3, 2 (1878) 293=**CANSCORA DIFFUSA** (Willd.) R. Br.

This species is of local occurrence in the Philippines but is rather widely distributed in the Archipelago at low and medium altitudes, growing in damp shaded places about cliffs, along small streams, etc. It is the type of the genus *Cobamba* of Blanco.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 115*).

LIMNANTHEMUM Gmelin

Menyanthes indica Linn.; Blanco Fl. Filip. (1837) 87; ed. 2 (1845; 63; ed. 3, 1 (1877) 118=**LIMNANTHEMUM INDICUM** (Linn.) Griseb.

Fernandez-Villar referred the form that Blanco described to *Limnanthemum cristatum* Griseb., Blanco's material being from Lake Bay, Luzon. Both *Limnanthemum indicum* Griseb. and *L. cristatum* Griseb. grow in the lake, and from Blanco's description of the leaves as a "pie y medio de diámetro," it is very

evident that the form currently interpreted as *Limnanthemum indicum* Griseb. was the one intended. Herbarium specimens rarely present leaves of such species in maximum size, the largest that I have actually seen being 30 cm in diameter.

Illustrative specimen from Lake Bay, Luzon, October, 1917 (*Merrill: Species Blancoanae No. 1064*).

APOCYNACEAE

ALLAMANDA Linnaeus

ALLAMANDA CATHARTICA Linn.; Blanco Fl. Filip. ed. 2 (1845) 64; ed. 3, 1 (1877) 120, *t. 30*.

The Linnean species was undoubtedly correctly interpreted by Blanco. It was introduced from Mexico at an early date and is still commonly cultivated for ornamental purposes in the Philippines.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 495*).

PLUMIERA Linnaeus

Plumiera alba Blanco Fl. Filip. (1837) 111; ed. 2 (1845) 80; ed. 3, 1 (1877) 148, *t. 39*, non Linn.=**PLUMIERA ACUMINATA** Ait. (*Plumiera acutifolia* Poir.).

This species was introduced into the Philippines at an early date from Mexico, and with the plant the Spaniards brought its Mexican name, it now being widely known in the Archipelago as *calachuchi, calosasi, carachucha, calonoche*, etc. It is found only in cultivation here and never produces fruits.

Illustrative specimen from Antipolo, Rizal Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 869*).

ALSTONIA R. Brown

Echites scholaris Linn.; Blanco Fl. Filip. (1837) 107; ed. 2 (1845) 77; ed. 3, 1 (1877) 144, *t. 113*=**ALSTONIA SCHOLARIS** (Linn.) R. Br.

This species is widely distributed in the Philippines at low altitudes and is widely known as *dita*, its Tagalog name.

Illustrative specimen from Antipolo, Rizal Province, Luzon, February, 1914 (*Merrill: Species Blancoanae No. 232*).

Echites trifida Blanco Fl. Filip. (1837) 109; ed. 2 (1845) 79; ed. 3, 1 (1877) 146, *t. 379*, non Jacq.=**ALSTONIA MACROPHYLLA** Wall.

Alstonia batino Blanco Fl. Filip. ed. 2 (1845) 589 (sp. nov.); ed. 3, 1 (1877) 163=**ALSTONIA MACROPHYLLA** Wall.

I can see no reason for considering that more than one species is included in *Echites trifida* Blanco and *Alstonia batino* Blanco, although Fernandez-Villar reduced the former to *Alstonia specta-*

bilis Miq., and the latter to *A. macrophylla* Wall.; Miquel's species is not known from the Philippines.

Illustrative specimens from Angat, Bulacan Province, Luzon, September, 1913 and December, 1914 (*Merrill: Species Blancoanae Nos. 335, 659*).

LOCHNERA Reichenbach

Vinca rosea Linn.; Blanco Fl. Filip. (1837) 116; ed. 2 (1845) 84; ed. 3, 1 (1877) 154, *t. 42*=**LOCHNERA ROSEA** (Linn.) Reichb. (*Ammocallis rosea* Small).

This species was undoubtedly introduced from tropical America; it is now widely distributed in the Philippines at low altitudes and is frequently thoroughly naturalized.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 231*).

TABERNAEMONTANA Linnaeus

Tabernaemontana laurifolia Blanco Fl. Filip. (1837) 114; ed. 2 (1845) 82; ed. 3, 1 (1877) 150, *t. 41*, non Linn.=**TABERNAEMONTANA PANDACAQUI** Poir.

This species is very common at low altitudes in Luzon and is especially abundant in and about Manila. It is universally known as *pandacaqui*. Sonnerat's figure, on which Poiret's species was based, was drawn from a Philippine specimen, not from a New Guinea plant as indicated in de Candolle's Prodromus.

Illustrative specimen from Angat, Bulacan Province, Luzon. September, 1913 (*Merrill: Species Blancoanae No. 266*).

TABERNAEMONTANA POLYGAMA Blanco Fl. Filip. ed. 2 (1845) 82 (*poligama*) **(sp. nov.); ed. 3, 1 (1877) 151.**

There is no doubt that the species described as *Tabernaemontana puberula* Merr. in Philip. Journ. Sci. 4 (1909) Bot. 319 is identical with *Tabernaemontana polygama* Blanco. The species is common in thickets in the vicinity of Manila. The corolla falls very soon after the flowers open, and Blanco apparently interpreted the flowers with fallen corollas as female flowers.

Illustrative specimens from near Mandaloyon, Rizal Province, Luzon, April 23, 1914 (*Merrill: Species Blancoanae Nos. 34, 243*).

VOACANGA Thouars

Tabernaemontana globosa Blanco Fl. Filip. (1837) 116 (sp. nov.); ed. 2 (1845) 83; ed. 3, 1 (1877) 153=**VOACANGA GLOBOSA** (Blanco) Merr.

This species is widely distributed in the Philippines; it is abundant in the provinces contiguous to Manila and is generally known as *bayag usa*.

Illustrative specimen from Los Baños, Laguna Province, Luzon, May, 1914, *comm. F. C. Gates* and *N. Catalan* (*Merrill: Species Blancoanae No. 462*).

ALYXIA R. Brown

Brabejum ? concatenatum Blanco Fl. Filip. ed. 2 (1845) 40 (sp. nov.); ed. 3, 1 (1877) 73=**ALYXIA CONCATENATA** (Blanco) comb. nov. (*Alyxia monilifera* Vidal).

This species is widely distributed in the Philippines, but it is usually not found below altitudes of 700 meters. Blanco's species was reduced by Fernandez-Villar to *Alyxia laurina* Gaudich., a species not known from the Philippines. The description is poor, but applies sufficiently well to the species later described by Vidal as *Alyxia monilifera*. Vidal referred to his *Alyxia monilifera* Blanco's *Brabejum lucidum*, but Cebu material agreeing with Blanco's description has persuaded me that *Brabejum lucidum* is entirely different from *Alyxia monilifera* Vidal, and accordingly Blanco's *Brabejum lucidum* (non *Alyxia lucida* Wall.) has been redescribed as *Alyxia blancoi* Merr. in Philip. Journ. Sci. 7 (1912) Bot. 330.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 159*).

Brabejum ? lucidum Blanco Fl. Filip. ed. 2 (1845) 40 (sp. nov.); ed. 3, 1 (1877) 74=**ALYXIA BLANCOI** Merr. in Philip. Journ. Sci. 7 (1912) Bot. 330.

Blanco's specific name is invalidated in *Alyxia* by *A. lucida* Wall., an entirely different species. Fernandez-Villar referred it to *Alyxia stellata* R. & S., a species not known from the Philippines, and I previously referred it to *Alyxia monilifera* Vid. Specimens from Cebu, the region from which Blanco secured his specimens of *Brabejum lucidum*, that agree with his descriptions indicate clearly that the form he described is different from Vidal's species; it apparently represents a distinct, valid species, which I have called *Alyxia blancoi* Merr. I have a specimen of this under the Visayan name *layo* from Bolohon, Cebu, the type locality of Blanco's species.

Brabejum ? pinnatum Blanco Fl. Filip. ed. 2 (1845) 40 (sp. nov.); ed. 3, 1 (1877) 74=? **ALYXIA sp.**

Blanco's material of this was from Cebu, for which he cites the Visayan name *layo*. He has unquestionably described a branch with distichous leaves as a pinnate leaf, but definitely describes the "leaflets" as opposite. All our Philippine material of *Alyxia* has verticillate leaves. A translation of Blanco's description is as follows: Leaves opposite, even-pinnate. Leaflets

five or more pairs, narrow, lanceolate, entire, glabrous, subsessile; with the further information that it was a shrub a yard or more in height, growing in Cebu, the leaves fragrant, 3 to 4 inches long, half an inch wide, and locally known as *layo*. A comprehensive botanical exploration of Cebu may yield material and data by which the species can be interpreted. It is certainly not *Alyxia odorata* Wall. where it was placed by Fernandez-Villar.

CERBERA Linnaeus

CERBERA MANGHAS Linn.; Blanco Fl. Filip. (1837) 125; ed. 2 (1845) 89; ed. 3, 1 (1877) 161.

Elcana seminuda Blanco Fl. Filip. ed. 2 (1845) 584 (gen. et sp. nov.); ed. 3, 3 (1879) 267=**CERBERA MANGHAS** Linn.

Blanco's description of *Cerbera manghas* is very poor, but apparently applies to the Linnean species. Fernandez-Villar reduced *Elcana seminuda* to *Cerbera lactaria* Ham.=*Cerbera odollam* Gaertn.=*Cerbera manghas* Linn., and there is scarcely any doubt but that this is the correct disposition of it. The only possible objection to the reduction is Blanco's statement that his material was from Angat, Bulacan Province, Luzon, a place well in the interior, while *Cerbera manghas* Linn. normally grows only near the seashore. *Cerbera manghas* Linn. is the only Philippine species known to me that conforms at all with Blanco's description. *Cerbera manghas* Linn. was based on an actual specimen collected by Osbeck in Java, but he included a literature reference to *Tabernaemontana* in the original description. Valeton [Ann. Jard. Bot. Buitenz. 12 (1905) 245] separates the eastern Malayan form from that of India and western Malaya, calling the former *Cerbera lactaria* Ham., and the latter *C. odollam* Gaertn. The Philippine form is all apparently referable to *Cerbera lactaria* Ham., as interpreted by Valeton, but I cannot distinguish it from *C. manghas* Linn. Along the seashore throughout the Philippines.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 318*).

THEVETIA Linnaeus

Cerbera thevetia Linn.; Blanco Fl. Filip. (1837) 125 (*thebethia*); ed. 2 (1845) 89; ed. 3, 1 (1877) 162, *t.* 45=**THEVETIA PERUVIANA** (Pers.) Merr. in Philip. Journ. Sci. 9 (1914) 130 (*Cerbera peruviana* Pers. Syn. 1 (1805) 267; *Thevetia nereifolia* Juss. ex Steud. Nomencl. ed. 2, 2 (1840) 680).

The Linnean species was correctly interpreted by Blanco, but unless the combination *Thevetia thevetia* (Linn.) Millsp. be

accepted Persoon's specific name *peruviana* is the oldest one for the species. *Thevetia peruviana* (Pers.) Merr. occurs in the Philippines only as a cultivated plant; it was introduced from Mexico by the Spaniards at an early date, either for ornamental purposes or for its use in medicine, or both.

Illustrative specimen from Manila, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 518*).

PARAMERIA Bentham

Echites torosa Llanos Fragm. Pl. Filip. (1851) 59; Blanco Fl. Filip. ed. 3, 4 [1] (1880) 42, non Jacq.=**PARAMERIA BARBATA** (Blume) K. Schum. (*P. philippinensis* Radlk.).

Llanos's description is very short, but it can apply to no other Philippine species. *Parameria barbata* is common and widely distributed in the Philippines at low altitudes and is generally known to the Tagalogs as *ductung ahas* and *paragtong ahas*. In Index Kewensis Llanos's name erroneously appears as *Ecdysanthera torosa*. I cannot distinguish this Philippine form from *Parameria barbata* (Blume) K. Schum.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 140*).

AGANOSMA G. Don

Echites repens Blanco Fl. Filip. (1837) 109, non Jacq.=**Echites procumbens** Blanco op. cit. ed. 2 (1845) 78 (sp. nov.); ed. 3, 1 (1877) 145, *t. 428*=**AGANOSMA ACUMINATA** G. Don. [*A. marginata* G. Don, *Holarrhena macrocarpa* F.-Vill., *H. procumbens* Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 59].

This species is of wide distribution in the Philippines. The follicles are distinctly more slender than Blanco describes them; he states that they are as thick as one's finger.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 372*).

CHONEMORPHA G. Don

Tabernaemontana elliptica Blanco Fl. Filip. (1837) 115 (sp. nov.); ed. 2 (1845) 83; ed. 3, 1 (1877) 152, non Thunb.=**CHONEMORPHA BLANCOI** nom. nov. [*Chonemorpha elliptica* Merr. & Rolfe in Philip. Journ. Sci. 3 (1908) Bot. 121, non *Tabernaemontana elliptica* Thunb.].

This species is widely distributed in Luzon, but it is nowhere abundant; it occurs in the primeval forest at low and medium altitudes. Blanco's species was reduced by Fernandez-Villar to *Chonemorpha macrophylla* Don, an allied but distinct form, which does not extend to the Philippines. As Blanco's original specific name was preoccupied, a new name is apparently necessary for the species, as proposed above.

Illustrative specimen from Mount Batulao, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 482*).

ICHNOCARPUS R. Brown

Echites caudata Blanco Fl. Filip. (1837) 106; ed. 2 (1845) 77; ed. 3, 1 (1877) 143, *t. 97*, non Linn.=**ICHNOCARPUS OVATIFOLIUS** A. DC. Prodr. 8 (1844) 435.

Blanco's conception of the Linnean species was reduced by Fernandez-Villar to *Ichnocarpus frutescens* R. Br., a species not definitely known from the Philippines. *Ichnocarpus navesii* Rolfe in Journ. Linn. Soc. Bot. 21 (1884) 313 is the same as de Candolle's species. It is common and widely distributed in the Philippines at low and medium altitudes and is very generally known as *hinguïo*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 456*).

NERIUM Linnaeus

Nerium oleander Blanco Fl. Filip. (1837) 104; ed. 2 (1845) 75; ed. 3, 1 (1877) 140, *t. 37*, non Linn.=**NERIUM INDICUM** Mill. (*N. odorum* Soland.).

This species is widely distributed in the Philippines in cultivation, is nowhere spontaneous, and never produces fruit in the Archipelago. It is very generally known under its Spanish name *adelfa* and was undoubtedly introduced into the Philippines by the Spaniards.

Illustrative specimen from Manila, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 819*).

WRIGHTIA R. Brown

Anasser laniti Blanco Fl. Filip. (1837) 112 (sp. nov.); ed. 2 (1845) 81; ed. 3, 1 (1877) 149, *t. 40*=**WRIGHTIA LANITI** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 59 (*Wrightia ovata* A. DC.).

This species is common and widely distributed in the Philippines, and it is abundant in those regions from which Blanco received most of his botanical material. It is universally known in the Tagalog provinces, at least, as *laniti*. It may prove to be identical with *W. pubescens* R. Br.

Illustrative specimen from Rizal Province, Luzon, November, 1911 (*Merrill: Species Blancoanae No. 562*).

PARSONSIA R. Brown

Echites spiralis Blanco Fl. Filip. (1837) 110 (sp. nov.); ed. 2 (1845) 79; ed. 3, 1 (1877) 146, *t. 310*=**PARSONSIA CONFUSA** Merr.

Fernandez-Villar reduced this to *Parsonsia rheedii* F.-Vill. (*Heligme rheedii* Wight), a species that does not extend to the

Philippines. Accordingly the new name *Parsonsia confusa* Merr. was proposed for the Philippine form described by Blanco, his specific name being invalidated in the genus by *Parsonsia spiralis* Wall. It is not entirely certain that *Parsonsia confusa* Merr. is really distinct from *Parsonsia cumingii* A. DC., a very similar, and at least a very closely allied species, also based on Philippine material.

Illustrative specimen from Lamao, Bataan Province, Luzon, May, 1916 (*Merrill: Species Blancoanae No. 1014*).

ASCLEPIADACEAE

FINLAYSONIA Wallich

Tabernaemontana cirrhosa Blanco Fl. Filip. (1837) 115 (sp. nov.); ed. 2 (1845) 83; ed. 3, 1 (1877) 152=**FINLAYSONIA OBOVATA** Wall.

This was reduced by Fernandez-Villar to *Finlaysonia obovata* Wall., which is certainly the correct disposition of it. I formerly considered this reduction to be an erroneous one, chiefly for the reason that Wallich's species was then unknown from the Philippines, but I am now convinced that it is correct. *Finlaysonia obovata* Wall. is now known from several localities in the Philippines, always growing in the mangrove swamps, and Blanco's description of *Tabernaemontana cirrhosa* conforms closely to it.

STREPTOCAULON Wight & Arnott

Periploca calumpitensis Llanos Fragm. Pl. Filip. (1851) 62 (sp. nov.); Blanco Fl. Filip. ed. 3, 4[1] (1880) 47, *t. 138*=**STREPTOCAULON BAUMII** Dcne.

This species is common and widely distributed in central and northern Luzon and in Mindoro, at low and medium altitudes. Fernandez-Villar was certainly correct in making this reduction, as Llanos's description applies unmistakably to Decaisne's species.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 168*).

ASCLEPIAS Linnaeus

Asclepias syriaca Blanco Fl. Filip. (1837) 204 (*siriaca*); ed. 2 (1845) 144; ed. 3, 1 (1877) 261, *t. 71*, non Linn.=**ASCLEPIAS CURASSAVICA** Linn.

This species, originating in tropical America, was introduced into the Philippines at an early date and is now common and widely distributed in the settled areas at low altitudes throughout the Archipelago. It is our only representative of the genus.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 83*).

CALOTROPIS R. Brown

Asclepias gigantea Willd.; Blanco Fl. Filip. (1837) 207; ed. 2 (1845) 146; ed. 3, 1 (1877) 262, *t. 258*=**CALOTROPIS GIGANTEA** Dryand.

This species is of local occurrence in the Philippines, apparently always planted. It is certainly not a native of the Archipelago, but a purposely introduced one.

Illustrative specimen from Manila, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 221*).

SARCOSTEMMA R. Brown

Cynanchum viminale Blanco Fl. Filip. (1837) 203; ed. 2 (1845) 143; ed. 3, 1 (1877) 257 (*Cinanchum*), non Linn.=**SARCOSTEMMA BRUNONIANUM W. & A.**

Blanco's material was from Punta de Azufre, Batangas Province, Luzon, and the species is now known from Corregidor and the Bataan coast, both points north of Batangas. Fernandez-Villar erroneously considered that Blanco's interpretation of *Cynanchum viminale* Linn.=*Sarcostemma viminale* R. Br. was correct, but the Linnean species is confined to South Africa. The species is at least the Philippine form figured by Vidal Sinopsis Atlas *t. 68, f. H* as *Sarcostemma brunonianum* W. & A., and the one represented by recently collected specimens so distributed.

Illustrative specimen from Punta de Azufre, Batangas Province, Luzon, (a topotype) October, 1916, abundant in thickets near the sea (*Merrill: Species Blancoanae No. 1004*).

GYMNEMA R. Brown

Asclepias daemia Blanco Fl. Filip. (1837) 208; ed. 2 (1845) 146; ed. 3, 1 (1877) 263, *t. 402* (as *Bidaria inodora* Dcne.) non Forsk.=**GYMNEMA TINGENS (Roxb.) W. & A.**

Blanco's description is very imperfect, but I am satisfied to follow Fernandez-Villar in this reduction as the description, so far as it goes, applies to this species. *Gymnema tingens* occurs near Manila and is widely distributed in the Philippines at low and medium altitudes, although nowhere abundant.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 150*).

SARCOLOBUS R. Brown

Asclepias peregrina Blanco Fl. Filip. (1837) 207 (sp. nov.); ed. 2 (1845) 146; ed. 3, 1 (1877) 262=**SARCOLOBUS PEREGRINUS** Schltr.

Blanco's specimens were from Bauang, Batangas Province, Luzon, the plant growing in swampy places near the seashore; about Manila Bay it grows in thickets bordering the mangrove swamps, well within the influence of salt water. It was reduced

by Fernandez-Villar to *Sarcolobus carinatus* Wall., a species not known from the Philippines. *Sarcolobus peregrinus* Schltr. was not based on Blanco's description, but on actual specimens, with the statement: "This plant is evidently identical with *Asclepias peregrina* Blanco, therefore I have chosen the same specific name." There is no doubt whatever that *Asclepias peregrina* Blanco is identical with *Sarcolobus peregrinus* Schltr. The fruits are hard, smooth, mottled with dark- and light-green, and in size and shape strongly resemble those of *Heritiera litoralis* Dry.

Illustrative specimen from Lamao, Bataan Province, Luzon, May, 1916 (*Merrill: Species Blancoanae No. 1016*).

TYLOPHORA R. Brown

Cynanchum tenellum Blanco Fl. Filip. (1837) 204; ed. 2 (1845) 143; ed. 3, 1 (1877) 258, non Linn. f., nec Riedel=**TYLOPHORA PERROTTETIANA** Dcne.

Oxystelma bifidum Llanos Frag. Pl. Filip. (1851) 64 (sp. nov); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 48=? **TYLOPHORA PERROTTETIANA** Dcne. (*Tylophora bifida* F.-Vill.).

Cynanchum tenellum was reduced by Fernandez-Villar to the Philippine *Tylophora perrottetiana* Dcne., but whether or not *T. perrottetiana* Dcne. is distinct from *T. merrillii* Schltr., the form that Blanco described is certainly the latter. The species is not uncommon in and about Manila, and is the only one of the genus to be found in the vicinity of the city. Blanco's description, although very short and imperfect, applies to *T. merrillii* Schltr., which I consider to be the same as *Tylophora perrottetiana* Dcne., better than to any other known Philippine species of the entire family *Asclepiadaceae.* Llanos's description of *Oxystelma bifidum* is very poor. Fernandez-Villar transferred it to *Tylophora* as a valid species. If a *Tylophora,* it is probably a form of *T. perrottetiana* Dcne. The petals of this species, however, are never more than very slightly retuse and can hardly be described as bifid as Llanos indicated for the form he described. Llanos's species is not represented among his specimens in the de Candolle herbarium.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 192*).

STEPHANOTIS Thouars

Apocynum mucronatum Blanco Fl. Filip. (1837) (sp. nov.); ed. 2 (1845) 143; ed. 3, 1 (1877) 259=**STEPHANOTIS MUCRONATA** (Blanco) comb. nov. (*Stephanotis chinensis* Champ.).

This was described from cultivated specimens, Blanco definitely stating that its seeds were sent to him from China. Fernandez-Villar was wholly wrong in referring it to the endemic *Toxocarpus gracilis* Dcne., to which Blanco's description does not apply. It definitely is an asclepiadaceous, not an apocynaceous plant, and is undoubtedly the same as *Stephanotis chinensis* Champ.; Blanco's specific name is the older.

CENTROSTEMMA Decaisne

Asclepias carnosa Blanco Fl. Filip. (1837) 208; ed. 2 (1845) 147; ed. 3, 1 (1877) 263, *t. 402 bis*, non Linn. f.=**CENTROSTEMMA MULTIFLORUM** (Blume) Dcne. (*Hoya multiflora* Blume).

This species is of wide distribution in the forests of the Philippines, growing at low and medium altitudes. It usually occurs as an epiphyte on decaying parts of living trees. *Centrostemma lindleyanum* Dcne., described from Philippine material, is a synonym.

Illustrative specimen from Bosoboso, Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 852*).

DISCHIDIOPSIS Schlechter

Marsdenia parasitica Blanco Fl. Filip. (1837) 120 (sp. nov.) (*parasita*); ed. 2 (1845) 86; ed. 3, 1 (1877) 156=**DISCHIDIOPSIS PARASITICA** (Blanco) comb. nov. [*Conchophyllum merrillii* Schltr. ex Merr. Fl. Manila (1912) 380].

Marsdenia parasitica Blanco was reduced by Fernandez-Villar to *Hoya parasitica* Wall., a species that does not extend to the Philippines, and one to which Blanco's description does not at all apply. In my previous consideration of Blanco's species I considered it as certainly a species of *Hoya*. However, a careful examination of Blanco's description conclusively shows that he was describing no *Hoya:* "corola de figura de vinagera * * * con la garganta cerrada con una corona membranácea * * * las flores encarnadas," etc. Among all the Philippine *Asclepiadaceae* known to me, his description applies only to *Conchophyllum merrillii* Schltr., a species that occurs on mango trees in the vicinity of Manila, and which flowers from March to July. I have absolutely no hesitation in making this transfer of Blanco's species to *Dischidiopsis*, and identifying with it *Conchophyllum merrillii* Schltr.

Illustrative specimen from Pasay, Rizal Province, Luzon, December, 1914, epiphytic on *Mangifera indica* Linn. (*Merrill: Species Blancoanae No. 693*).

HOYA R. Brown

Stapelia meliflua Blanco Fl. Filip. (1837) 202 (sp. nov.); ed. 2 (1845) 142; ed. 3, 1 (1877) 256=**HOYA MELIFLUA** (Blanco) comb. nov. (*Hoya luzonica* Schltr.).

Hoya carnosa Blanco Fl. Filip. ed. 2 (1845) 142; ed. 3, 1 (1877) 257, non R. Br.=? **HOYA MELIFLUA** (Blanco) Merr.

Among the numerous Philippine species of *Hoya*, Blanco's description applies best to *H. luzonica* Schltr., which is, moreover, the only species of the genus still to be found in the vicinity of Manila, and is generally distributed in the regions from which Blanco secured most of his botanical material. I have no hesitation whatever in adopting Blanco's specific name for this species. Fernandez-Villar reduced it to *Hoya diversifolia* Blume, a species not definitely known from the Philippines. As to *Hoya carnosa* Blanco, the reduction is doubtful, yet from the description I cannot distinguish it from *Stapelia meliflua* Blanco. He states that it was an exotic cultivated plant; the only species of *Hoya* found in cultivation in Manila to-day is *H. luzonica* Schltr.=*H. meliflua* (Blanco) Merr. Fernandez-Villar considered that Blanco correctly interpreted *Hoya carnosa* R. Br., and while this may be the case, it seems to be improbable in view of the fact that *Hoya carnosa* R. Br. is not to-day found in the Philippines.

MARSDENIA R. Brown

Marsdenia akkar Blanco Fl. Filip. (1837) 118 (sp. nov.); ed. 2 (1845) 85; ed. 3, 1 (1877) 155=**MARSDENIA TINCTORIA** (Roxb.) R. Br.

Marsdenia tagudinia Blanco Fl. Filip. (1837) 121 (sp. nov.); ed. 2 (1845) 86; ed. 3, 1 (1877) 157=**MARSDENIA TINCTORIA** (Roxb.) R. Br.

Marsdenia akkar Blanco seems to be identical with *Marsdenia tinctoria* R. Br., where it was reduced by Fernandez-Villar. The species is widely distributed in the Philippines at low and medium altitudes, in thickets and in forests, but is of local occurrence and is not abundant. *Marsdenia tagudinia* Blanco was considered by Fernandez-Villar to represent a valid species of *Marsdenia*, but I can see no reason for considering it other than *Marsdenia tinctoria*. Blanco's material was from Tagudin, Mountain Province, Luzon, where the plant was known as *tayom-tayom*, and where it was used for dyeing cotton and other fabrics blue.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, August 23, 1916, *comm. C. Mabesa* (*Merrill: Species Blancoanae No. 977*).

HETEROSTEMMA Wight & Arnott

Stapelia quadrangula Blanco Fl. Filip. (1837) 202; ed. 2 (1845) 142; ed. 3, 1 (1877) 255, non Forsk.=**HETEROSTEMMA CUSPIDATUM** Dcne.

There is very little doubt as to the correctness of this interpretation of Blanco's *Stapelia quadrangula.* The reduction was originally made by Fernandez-Villar, and I consider it to be correct. The species is of very local occurrence in Luzon. The old stems are remarkable for their thick corky wings or ridges.

Illustrative specimen from Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 807*).

TELOSMA Coville

Pergularia procumbens Blanco Fl. Filip. (1837) 201 (sp. nov.)=**Pergularia glabra** Blanco op. cit. ed. 2 (1845) 141; ed. 3, 1 (1877) 254, *t. 397*, non Linn.=**TELOSMA PROCUMBENS** (Blanco) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 243 (*Pergularia filipes* Schltr. in Perk. Frag. Fl. Philip. (1904) 135).

Cynanchum ? hirtum Blanco Fl. Filip. (1837) 203; ed. 2 (1845) 143; ed. 3, 1 (1877) 258, non Linn.=**TELOSMA PROCUMBENS** (Blanco) Merr.

Pergularia glandulosa Blanco Fl. Filip. (1837) 201 (sp. nov.)=ed. 2 (1845) 141; ed. 3, 1 (1877) 254=**TELOSMA PROCUMBENS** (Blanco) Merr.

This species is common in thickets in the neighborhood of Manila and is widely distributed in the Philippines at low and medium altitudes. It is commonly known as *mil leguas*, from its similarity to *Telosma odoratissima* (Lour.) Coville, this Spanish name properly belonging with the latter species. There is absolutely no doubt as to the identity of Blanco's *Pergularia procumbens* and no doubt as to the correctness of the reference here of his *Cynanchum ? hirtum* (non Linn.); of the former Blanco describes only flowering specimens, of the latter only fruiting specimens. Fernandez-Villar erroneously reduced Blanco's *Cynanchum ? hirtum* to *Dregea viridiflora* Benth. Fresh mature fruits of *Telosma procumbens* (Blanco) Merr. are green, lanceolate-pyramidal, about 15 cm long, 3 to 3.5 cm wide, about 2.5 cm thick, nearly square in cross section, or one side somewhat narrower than the other, with a thick, coarsely and irregularly toothed wing 3 to 7 mm wide running nearly the entire length of each angle, base rounded or obtuse, apex acuminate, smooth. The fruits dry very slowly, and the younger ones are cooked and eaten by the Filipinos. This description is quite in agreement with Blanco's description of the fruits of *Cynanchum ? hirtum* except that normally, at least, they are smooth, not "verrugoso," i. e., warted. F.-Villar reduced *Pergularia*

glandulosa Blanco to *P. minor* Andr., a manifest error. The form described by Blanco is clearly identical with the ones otherwise described by him as *Pergularia procumbens* and as *Cynanchum hirtum.*

As to the propriety of adopting the generic name *Telosma* there can be no doubt. Coville proposed the name in 1905 for *Pergularia* of authors, not of Linnaeus [Contr. U. S. Nat. Herb. 9 (1905) 384], typifying the genus *Telosma* by *Pergularia odoratissima* Lour. Two years later N. E. Brown, not knowing of the publication of Coville's generic name, for the same reason proposed the new generic name *Prageluria* [Kew Bull. (1907) 325]. *Pergularia* of Linnaeus is the genus later described by R. Brown as *Daemia* (*Doemia*).

Illustrative specimens from Pasay, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae Nos. 28, 475*).

ASCLEPIADACEAE OF UNCERTAIN STATUS

Cylixylon heterophyllum Llanos Frag. Pl. Filip. (1851) 59 (*heterophillum*) (gen. et sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 42=*Asclepiadaceae* indet.

Fernandez-Villar reduced this to *Gymnanthera pedunculata* (Miq.) F.-Vill., a species that is definitely known in the Philippines only from Mindanao, and one to which Llanos's description does not well apply. Llanos's specimens were from Balatong and Pulilan, Bulacan Province, Luzon, and I have not been able to refer the form described to any known genus and species of the family; the species is not represented among the specimens sent by Llanos to the de Candolle herbarium.

CONVOLVULACEAE

EVOLVULUS Linnaeus

Evolvulus linifolius Linn.; Blanco Fl. Filip. (1837) 221, ed. 2 (1845) 156, ed. 3, 1 (1877) 279=**EVOLVULUS ALSINOIDES** Linn.

This species is widely distributed in the Philippines but is of local occurrence. It grows in open grassy places at low and medium altitudes, usually in poor soil that becomes thoroughly dry in the dry season.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 137*).

PORANA Burman

PORANA VOLUBILIS Burm, f.; Blanco Fl. Filip. (1837) 88; ed. 2 (1845) 64; ed. 3, 1 (1877) 119.

Burman's species was apparently correctly interpreted by

Blanco and was thus considered by Fernandez-Villar. It is of local occurrence in the Philippines.

Illustrative specimen from cultivated plants, Los Baños, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 839*).

LEPISTEMON Blume

Polemonium obscurum Blanco Fl. Filip. (1837) 103 (sp. nov.); ed. 2 (1845) 75; ed. 3, 1 (1877) 139=**LEPISTEMON BINECTARIFERUM** (Wall.) O. Ktze. (*L. flavescens* Blume).

This species is rather widely distributed in the Philippines at low and medium altitudes in the settled areas, growing in thickets. Wallich's specific name antedates Blume's *Lepistemon flavescens* by about one year.

Illustrative specimen from Pasig, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 794*).

CALONICTYON Choisy

Convolvulus catharticus Blanco Fl. Filip. (1837) 94 (sp. nov.)=**Convolvulus longiflorus** Spreng.; Blanco Fl. Filip. ed. 2 (1845) 69; ed. 3, 1 (1877) 130=**CALONYCTION ALBUM** (Linn.) House.

Blanco correctly reduced his new species, *Convolvulus catharticus*, to *C. longiflorus* Spreng. in the second edition of the Flora de Filipinas; Sprengel's species, however, was based on *Ipomoea longiflora* R. Br., which is a synonym of *Calonyction album* (Linn.) House; see House in Bull. Torr. Bot. Club. 31 (1904) 591. Fernandez-Villar considered it under R. Brown's name, while I formerly placed it under *Ipomoea glaberrima* Boj., apparently a synonym of *Calonyction album* House.

Illustrative specimen from Taal Volcano, Batangas Province, Luzon, January, 1917 (*Merrill: Species Blancoanae No. 1051*).

Convolvulus muricatus Blanco Fl. Filip. (1837) 92; ed. 2 (1845) 68; ed. 3, 1 (1877) 127, *t. 332*, non Linn.=**CALONICTYON ACULEATUM** (Linn.) House (*C. bona-nox* Boj.).

This species is common and widely distributed in the settled areas of the Philippines at low and medium altitudes, is certainly an introduced plant in the Archipelago, and probably originated in tropical America. Its nomenclature is rather complicated, and it has many synonyms. The specific name adopted by Doctor House seems to be the oldest valid one for the species.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 177*).

Convolvulus colubrinus Blanco Fl. Filip. ed. 2 (1845) 66 (sp. nov.); ed. 3, 1 (1877) 125, *t. 315*=**CALONICTYON MURICATUM** (Linn.) Don.

Fernandez-Villar reduced this to *Ipomoea muricata* Jacq.,

which is possibly a synonym of *Calonictyon aculeatum* (Linn.) House, although Hallier f. [Bull. Herb. Boiss. **5** (1897) 1044] retains the species as *Calonictyon muricatum* (Linn.) Don for the particular form to which Blanco's description of *Convolvulus colubrinus* applies. *Convolvulus colubrinus* Blanco is occasionally found in cultivation in the Philippines, being locally known as *tonquing*. The flowers are somewhat purplish and much smaller than in *Calonictyon aculeatum* House and *C. album* House, 5 to 6 cm long, the limb about 5 cm in diameter.

QUAMOCLIT Tournefort

Ipomoea quamoclit Linn.; Blanco Fl. Filip. (1837) 97; ed. 2 (1845) 72; ed. 3, 1 (1877) 134, *t. 33*=**QUAMOCLIT PENNATA** (Descr.) Voigt (*Quamoclit vulgaris* Choisy).

This species was introduced from Mexico at an early date by the Spaniards and is now widely distributed in the settled areas of the Philippines at low and medium altitudes. It is thoroughly naturalized in many regions and is also commonly cultivated for ornamental purposes.

Illustrative specimen from Obando, Bulacan Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 513*).

IPOMOEA Linnaeus

Convulvulus nil Linn.; Blanco Fl. Filip. (1837) 92; ed. 2 (1845) 68; ed. 3, 1 (1877) 128, *t. 66*=**IPOMOEA NIL** Roth.

The Linnean species was correctly interpreted by Blanco. It is of rather wide distribution in the settled areas at low altitudes in the Philippines; introduced from tropical America.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 281*).

Convulvulus dentatus Blanco Fl. Filip. (1837) 89; ed. 2 (1845) 66; ed. 3, 1 (1877) 123, *t. 31* (as *I. commutata* R. & S.), non Vahl=**IPOMOEA TRILOBA** Linn. (*I. blancoi* Choisy).

This species is common and widely distributed in the Philippines at low and medium altitudes in the settled areas, having been introduced from Mexico through the intermediary of the Acapulco-Manila galleons; it also occurs in Guam, Marianne Islands, which was a stopping place for all ships from Acapulco to Manila. Blanco's description of *Convolvulus dentatus* is the whole basis for *Ipomoea blancoi* Choisy in DC. Prodr. **9** (1845) 389, so that Choisy's species is merely a synonym of *Ipomoea triloba* Linn.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 459*).

IPOMOEA PES-TIGRIDIS Linn.; Blanco Fl. Filip. (1837) 87; ed. 2 (1845) 71; ed. 3, 1 (1877) 133.

The Linnean species was correctly interpreted by Blanco. It is common and widely distributed in the settled areas in the Philippines at low altitudes and has the appearance of being an introduced species; it is certainly not a true native of the Philippines.

Illustrative specimen from Angat, Bulacan Province, Luzon, August, 1913 (*Merrill: Species Blancoanae No. 292*).

Convolvulus batatas Linn.; Blanco Fl. Filip. (1837) 93; ed. 2 (1845) 68; ed. 3, 1 (1877) 129=**IPOMOEA BATATAS** (Linn.) Poir.

This species is widely distributed in the Philippines in cultivation and is extensively used as food. It is universally known in the Philippines as *camote,* and there is no doubt but that the species was introduced into the Philippines from Mexico by the Spaniards, who brought the Mexican name with the plant. Mercado, writing in the last third of the seventeenth century, states: "De estos años a esta parte han traído de las Islas de los ladrones [Marianne Islands] otro género de camote, que es diferente en el gusto," showing that economic plants were then being brought into the Philippines, the form mentioned by him having undoubtedly been introduced by the Spaniards into the Marianne Islands from Mexico. Rumphius notes that the camote was introduced into Amboina from the Philippines.

Illustrative specimen from Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 306*).

Convolvulus pes-caprae Linn.; Blanco Fl. Filip. (1837) 88; ed. 2 (1845) 65; ed. 3, 1 (1877) 123, *t. 29*=**IPOMOEA PES-CAPRAE** (Linn.) Roth.

The Linnean species was correctly interpreted by Blanco. It occurs throughout the Philippines along the seashore, a characteristic species of the sandy beaches; also along the shores of some lakes.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 105*).

Convolvulus paniculatus Linn.; Blanco Fl. Filip. (1837) 96; ed. 2 (1845) 70; ed. 3, 1 (1877) 131, *t. 81*=**IPOMOEA PANICULATA** (Linn.) R. Br. (*Ipomoea digitata* Linn.).

This species is widely distributed in the Philippines, occurring in thickets near the sea or more or less within the influence of brackish water. The Linnean species was correctly interpreted by Blanco. *Convolvulus paniculatus* Linn. being published before *Ipomoea digitata* Linn.

Illustrative specimen from Obando, Bulacan Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 392*).

Convolvulus repens Vahl; Blanco Fl. Filip. (1837) 92; ed. 2 (1845) 68; ed. 3, 1 (1877) 128, *t. 149*, non Linn.=**IPOMOEA REPTANS** (Linn.) Poir.

This species is common and widely distributed in the Philippines at low and medium altitudes, growing in open muddy places, shallow pools, etc.; is universally known to the Filipinos as *cancong;* and is a commonly used pot herb. The status of *Convolvulus reptans* Linn., on which *Ipomoea reptans* is based, is subject to an interpretation of types, regarding which authorities differ. The specimen in the Linnean herbarium is *Merremia caespitosa* Hallier f.=*M. hirta* (Linn.) Merr.; the first reference to a description and figure is to *Ballel* of Rheede's Hortus Malabaricus which is *Ipomoea reptans* as here interpreted. For a discussion of the question see Merrill in Philip. Journ. Sci. 7 (1912) Bot. 244, 245.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 427*).

MERREMIA Dennstaedt

Convolvulus reniformis Roxb.; Blanco Fl. Filip. (1837) 91; ed. 2 (1845) 67; ed. 3, 1 (1877) 126=**MERREMIA EMARGINATA** (Burm. f.) Hallier f.

Blanco correctly interpreted Roxburgh's species, but Burman's specific name is the oldest unless *Convolvulus gangeticus* Linn. should prove to be identical with this species. The species has all the appearance of being an introduced one in the Philippines, as it occurs only in the settled areas.

Illustrative specimen from Lamao, Bataan Province, Luzon, November, 1913 (*Merrill: Species Blancoanae No. 357*).

Ipomoea hepaticifolia Blanco Fl. Filip. ed. 2 (1845) 72; ed. 3, 1 (1877) 134, non Linn.=**MERREMIA HIRTA** (Linn.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 244 (*M. caespitosa* Hallier f.).

There is no doubt as to the correctness of the identification of Blanco's *Ipomoea hepaticifolia,* and it appears to be a form of *Merremia caespitosa* Hallier f., for which I have taken up the Linnean name *Merremia hirta.* The question of the proper specific name for the species is somewhat obscure, and the matter is discussed by me in making the above transfer to *Merremia.* Blanco's specimens were from Parañaque, a town at sea level a few kilometers south of Manila. The species, presenting considerable variation, is widely distributed in the settled

areas of the Philippines at low altitudes. By Fernandez-Villar it was reduced to *Ipomoea angustifolia* Jacq.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 679*).

Chironia capsularis Blanco Fl. Filip. (1837) 102 (sp. nov.)=**Chironia lanosanthera** Blanco op. cit. ed. 2 (1845) 71 (nom. nov.); ed. 3, 1 (1877) 132, *t. 261, f. 1*=**MERREMIA NYMPHAEIFOLIA** (Blume) Hallier f.

This species was reduced by Fernandez-Villar to *Ipomoea peltata* Choisy, to which *Merremia nymphaeifolia* Hallier f. is very closely allied. The latter, however, has yellow, not white flowers. It is locally abundant and of very wide distribution in the Philippines at low and medium altitudes.

Illustrative specimen from Los Baños, Laguna Province, Luzon, November, 1915 (*Merrill: Species Blancoanae No. 952*).

Convolvulus distillatorius Blanco Fl. Filip. (1837) 95 (sp. nov.); ed. 2 (1845) 70; ed. 3, 1 (1877) 130=**MERREMIA DISTILLATORIA** (Blanco) **comb. nov.** (***Merremia similis*** **Elm.**).

This species was reduced by Fernandez-Villar to *Ipomoea paniculata* Linn.=*Stictocardia campanulata* Merr. in Philip. Journ. Sci. 9 (1914) Bot. 133; *S. tiliaefolia* (Desr.) Hallier f., a species that occurs in the Philippines but one to which Blanco's description does not apply. The plant described as *Merremia similis* Elm. Leafl. Philip. Bot. 1 (1908) 335 agrees in all respects with Blanco's description and occurs in the Visayan Islands from whence Blanco secured his specimens. It extends northward to Tayabas and Laguna Provinces, Luzon. Blanco's name is here accepted for the species.

Illustrative specimen from near Malicboi, Tayabas Province, Luzon, December, 1914, *comm. D. L. Topping* (*Merrill: Species Blancoanae No. 738*).

OPERCULINA S. Manso

Convolvulus maximus Blanco Fl. Filip. (1837) 91; ed. 2 (1845) 67; ed. 3, 1 (1877) 127, non Linn. f., nec Buch.-Ham.=**OPERCULINA TURPETHUM** (Linn.) **S. Manso.**

Ipomoea reptans Llanos Frag. Pl. Filip. (1851) 55; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 39, non Poir.=**OPERCULINA TURPETHUM** (Linn.) **S. Manso.**

Ipomoea ventricosa Llanos op. cit. 56, 40, non G. Don=**OPERCULINA TURPETHUM** (Linn.) **S. Manso.**

These reductions were made by Fernandez-Villar (*Ipomoea turpethum* R. Br.=*Operculina turpethum* S. Manso), and they are certainly correct. *Operculina turpethum* S. Manso is com-

mon and widely distributed in the Philippines in the settled areas at low altitudes and is readily recognized among all the Philippine *Convolvulaceae* by its winged stems, a character mentioned by Blanco and by Llanos in the three descriptions cited above; the descriptions otherwise agree with *Operculina turpethum* S. Manso.

Illustrative specimen from Antipolo, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 554*).

HEWITTIA Wight & Arnott

Convolvulus hederaceus Blanco Fl. Filip. (1837) 90; ed. 2 (1845) 66; ed. 3, 1 (1877) 124, non Linn.=**HEWITTIA SUBLOBATA** (Linn. f.) O. Ktze. (*H. bicolor* Wight).

This species is common and widely distributed in open grasslands throughout the settled areas of the Philippines at low and medium altitudes. Blanco's description, although short, unmistakably applies to *Hewittia sublobata* O. Ktze.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 698*).

JACQUEMONTIA Choisy

Convolvulus valerianoides Blanco Fl. Filip. (1837) 90 (sp. nov.)=**Convolvulus boerhaavioides** Blanco op. cit. ed. 2 (1845) 67 (nom. nov.); ed. 3, 1 (1877) 125=**JACQUEMONTIA PANICULATA** (Burm. f.) Hallier f. (*Breweria valerianoides* F.-Vill.).

In Index Kewensis *Convolvulus valerianoides* Blanco is reduced to *Evolvulus alsinoides* Linn., and *C. boerhaavioides* Blanco, which was merely a change of name for *C. valerianoides*, to *Breweria valerianoides* F.-Vill., as a distinct species, following Fernandez-Villar. The species is, however, the widely distributed *Jacquemontia paniculata* (Burm.) Hallier f.

Illustrative specimen (topotype of Blanco's species), from Punta Santiago, Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 822*).

HYDROPHYLLACEAE

HYDROLEA Linnaeus

Hydrolea arayatensis Blanco Fl. Filip. (1837) 211 (sp. nov.)=**HYDROLEA ZEYLANICA** (Linn.) Vahl; Blanco op. cit. ed. 2 (1845) 148 (*zeilanica*); ed. 3, 1 (1877) 266.

Nama jamaicensis Blanco Fl. Filip. (1837) 211; ed. 2 (1845) 148; ed. 3, 1 (1877) 266, non Linn.=**HYDROLEA ZEYLANICA** (Linn.) Vahl.

The species that Blanco described as new, *Hydrolea arayatensis*. in the first edition of his Flora de Filipinas, he correctly reduced in the second edition to *H. zeylanica* (L.) Vahl. The

species is widely distributed in the Philippines at low and medium altitudes, growing in open wet places; it is of rather local occurrence in the Archipelago. Fernandez-Villar made no attempt to reduce *Nama jamaicensis*, but after a careful study of Blanco's description I am of the opinion that the specimen he described was the dwarfed form of *Hydrolea zeylanica* that is more or less characteristic of drying out pools and old rice paddies. I can suggest no other reduction of *Nama jamaicensis* Blanco, and his description, for the most part, conforms to this particular form of Vahl's species. It was observed by him in February, which conforms to the time that the dwarfed form of *Hydrolea zeylanica* Vahl is found.

Illustrative specimen from Obando, Bulacan Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 393*).

BORAGINACEAE

CORDIA Linnaeus

Cordia banalo Blanco Fl. Filip. (1837) 124 (sp. nov.)=**Cordia (?) ignota** Blanco Fl. Filip. ed. 2 (1845) 88 (nom. nov.); ed. 3, 1 (1877) 160=**CORDIA SUBCORDATA** Lam.

This species is found only along the seashore; widely distributed in the Archipelago. *Banalo* is one of its Tagalog names.

Illustrative specimen from Apulit Island, Taytay Bay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 525*).

Cordia sebestena Blanco Fl. Filip. (1837) 121; ed. 2 (1845) 87; ed. 3, 1 (1877) 158, *t. 43*, non Linn.=**CORDIA MYXA** Linn., forma (*C. blancoi* Vid.).

Cordia dichotoma Forst.; Blanco op. cit. 123; 88; 159=**CORDIA MYXA** Linn., forma.

This species is common and widely distributed in the Philippines. The Philippine form has been described by Vidal as *Cordia blancoi*, but this does not now appear to me to be specifically distinct from the widely distributed *Cordia myxa* Linn. Blanco's *Cordia sebestena* and his *C. dichotoma* are certainly only forms of the same species. It is universally known as *anonang*.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 91*).

EHRETIA Linnaeus

Ehretia beurreria Blanco Fl. Filip. (1837) 127; ed. 2 (1845) 91; ed. 3, 1 (1877) 166, non *E. bourreria* Linn.=**EHRETIA PHILIPPINENSIS** A. DC.

A species of wide distribution in Luzon at low and medium altitudes.

Illustrative specimen from Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 238*).

Menais mollis Blanco Fl. Filip. (1837) 139 (sp. nov.); ed. 2 (1845) 99; ed. 3, 1 (1877) 182, *t. 70* (as *E. virgata* Blanco) = **EHRETIA NAVESII** Vid. (*E. mollis* **Merr., non Wall.**).

This species is widely distributed in the Philippines and is closely allied to *Ehretia philippinensis* DC.

Illustrative specimen from San Pedro Macati, near Manila, Luzon, April, 1914 (*Merrill: Species Blancoanae No. 220*).

Carmona heterophylla Cav.; Blanco Fl. Filip. (1837) 209 (*Carmonea*); ed. 2 (1845) 147; ed. 3, 1 (1877) 265, *t. 72* = **EHRETIA MICROPHYLLA** Lam. (*E. buxifolia* **Roxb.**).

Carmona heterophylla Cav. is the type of the genus *Carmona* and was correctly interpreted by Blanco. It is, however, an exact synonym of *Ehretia microphylla* Lam. It is common and widely distributed in the Philippines at low and medium altitudes in the settled areas.

Illustrative specimen from Guinayangan, Tayabas Province, Luzon, April, 1913 (*Merrill: Species Blancoanae No. 3*).

Ehretia virgata Blanco Fl. Filip. (1837) 127; ed. 2 (1845) 90; ed. 3, 1 (1877) 165, non Sw. = **EHRETIA ACUMINATA** R. Br. (*E. polyantha* **A. DC.**, *E. onava* **A. DC.**).

Blanco's *Ehretia virgata* is the same as *Ehretia acuminata* R. Br., *sensu latiore*, although the Philippine specimens differ distinctly from Australian material. It is absolutely the same as *Ehretia polyantha* A. DC., the type of which was from Luzon, while *Ehretia onava* A. DC. is based solely on Blanco's description and is merely a new name for *Ehretia virgata* Blanco, non Sw.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 179*).

COLDENIA Linnaeus

COLDENIA PROCUMBENS Linn.; Blanco Fl. Filip. (1837) 74; ed. 2 (1845) 56 (*procumbus*); ed. 3, 1 (1877) 105.

The Linnean species was correctly interpreted by Blanco. It is widely distributed in the Philippines at low altitudes, occurring often as a weed in dried out rice paddies and along the dried banks of streams and small lakes. It is locally abundant.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 771*).

TOURNEFORTIA Linnaeus

Tournefortia hirsutissima Blanco Fl. Filip. (1837) 128; ed. 2 (1845) 91; ed. 3, 1 (1877) 167, *t. 46*, non Linn.=**TOURNEFORTIA SARMENTOSA** Lam.

The reduction of Blanco's *Tournefortia hirsutissima* to *T. sarmentosa* Lam., seems to be correct. It is difficult to separate it from some forms that have been referred to *T. horsfieldii* Miq. It is widely distributed in the Philippines at low altitudes.

Illustrative specimens from Umingan, Pangasinan Province, May, 1914 (*Merrill: Species Blancoanae No. 200*); Pasay, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 694*).

Tournefortia arborea Blanco Fl. Filip. (1837) 129 (sp. nov.); ed. 2 (1845) 91; ed. 3, 1 (1877) 167=**TOURNEFORTIA ARGENTEA** Linn. f.

This reduction was made by Fernandez-Villar and is certainly the correct disposition of Blanco's species. It is widely distributed in the Philippines along sandy seashores.

Illustrative specimen from Dingalan Bay, Tayabas Province, Luzon, August 24, 1916 (*Merrill: Species Blancoanae No. 1007*).

HELIOTROPIUM Linnaeus

Heliotropium parviflorum Blanco Fl. Filip. (1837) 80 (sp. nov.); ed. 2 (1845) 59; ed. 3, 1 (1877) 113, *t. 184*=**HELIOTROPIUM INDICUM** Linn.

A weed in the settled areas throughout the Philippines; it is not a native of the Archipelago but was probably of prehistoric introduction.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 364*).

TRICHODESMA R. Brown

Borago indica Linn.; Blanco Fl. Filip. ed. 2 (1845) 60; ed. 3, 1 (1877) 114 (*Borrago*)=**TRICHODESMA INDICUM** (Linn.) R. Br.

The Linnean species was correctly interpreted by Blanco. Blanco's specimens were from Parañaque, growing in peanut plantations; the species is still found in the same town and in the same habitat. It is of very local occurrence, and has so far been found in the Philippines only in the immediate vicinity of Manila; certainly an introduced weed.

Illustrative specimen from Parañaque, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 63*).

Borago indica Blanco Fl. Filip. (1837) 81, non Linn.=**Borago ? africana** Blanco op. cit. ed. 2 (1845) 60; ed. 3, 1 (1877) 114 (*Borrago*), non Linn.=**TRICHODESMA ZEYLANICUM** (Linn.) R. Br.

This weed is of local occurrence in the Philippines and is

found only in the settled areas at low and medium altitudes. It is unquestionably an introduced plant in the Philippines.

Illustrative specimen from Pasig, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 769*).

VERBENACEAE

LANTANA Linnaeus

Lantana viburnoides Blanco Fl. Filip. ed. 2 (1845) 345; ed. 3, 2 (1878) 275, *t. 216*, non Vahl=**LANTANA CAMARA** Linn.

The species is now abundant locally, mostly in and about towns in the Philippines, but is nowhere a pest as it is in the Hawaiian Islands. The inference from Blanco's statement "Arbusto oriundo de China, que se cultiva en Manila" is that the species was introduced shortly before the year 1845.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 565*).

LIPPIA Linnaeus

Verbena capitata Forsk.; Blanco Fl. Filip. (1837) 19; ed. 2 (1845) 14; ed. 3, 1 (1877) 26=**LIPPIA NODIFLORA** (Linn.) Rich.

A species very common and of wide distribution in the settled areas in the Philippines, possibly originating in tropical America.

Illustrative specimen from Manila, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 452*).

CALLICARPA Linnaeus

Callicarpa americana Blanco Fl. Filip. (1837) 517; ed. 2 (1845) 360; ed. 3, 2 (1878) 300, *t. 427 bis*, non Linn.=**CALLICARPA BLANCOI** Rolfe.

This species is common and widely distributed in the Philippines at low altitudes, and is abundant in the vicinity of Manila where it is locally known as *tubang dalag*, one of the native names cited by Blanco. The name is from *tuba* (*Croton tiglium*) and *dalag* (a mud fish), the plant being used for stupefying fish. *Callicarpa blancoi* Rolfe presents considerable variation, but the illustrative material very definitely represents the species.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 637*).

TECTONA Linnaeus f.

Diospyros tectona Blanco Fl. Filip. ed. 2 (1845) 609, *nomen nudum*=**TECTONA PHILIPPINENSIS** Benth. & Hook. f.

The name *Diospyros tectona* Blanco appears in the second edi-

tion of the Flora de Filipinas only, and then as a *nomen nudum* in the index to native names under *dalandon*. I have no authority for the reduction to *Tectona philippinensis* Benth. & Hook. f. other than that of Fernandez-Villar Novis. App. (1880) 158, and as his specimens were from Mindanao there is reason to believe that he had an entirely different plant. *Tectona philippinensis* Benth. & Hook. f. is known at the present time only from the Province of Batangas, three collections, and the native names appearing on the two recent collections are *malamolauin* and *malapangit*. The species is described in Philip. Journ. Sci. 5 (1910) Bot. 227.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 503*).

TECTONA GRANDIS Linn. f.; Blanco Fl. Filip. (1837) 130; ed. 2 (1845) 92 (*Tektona*); ed. 3, 1 (1877) 170, *t. 114*.

This species was correctly interpreted by Blanco. The cultivated tree, or a descendant of it, mentioned by Blanco as occurring in Tanay, Rizal, still exists there. It is known also in parts of Mindanao and the Sulu Archipelago, but whether native there, or introduced, is not certain.

Illustrative specimen from cultivated plants, Los Baños, Laguna Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 837*).

PREMNA Linnaeus

PREMNA NAUSEOSA Blanco Fl. Filip. (1837) 489 (sp. nov.) = **Premna integrifolia** Blanco op. cit. ed. 2 (1845) 342; ed. 3, 2 (1878) 268, *t. 396* (as *P. leucostoma* Miq.), non Linn.

Blanco's description is very short and imperfect, but there is no reason to doubt that the species is valid, and that it has been correctly interpreted; Blanco erred in reducing *P. nauseosa* to *P. integrifolia* L. Fernandez-Villar erroneously reduced it to *Premna mucronata* Roxb., a species that is not known to extend to the Philippines. It is commonly known as *molauin aso*.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 299*).

PREMNA ODORATA Blanco Fl. Filip. (1837) 488 (sp. nov.); ed. 2 (1845) 341; ed. 3, 2 (1878) 268.
Premna serratifolia Blanco op. cit. ed. 2 (1845) 342; ed. 3, 2 (1878) 269, non Linn. = **PREMNA ODORATA** Blanco.

Premna odorata Blanco is identical with *Premna vestita* Schauer, but Blanco's name is the older. *Premna serratifolia* Blanco, although very briefly characterized by Blanco, is mani-

festly the same species. It is common and widely distributed in the Philippines at low altitudes and is widely known as *alagao*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 435*).

Premna cordata Blanco Fl. Filip. (1837) 489, non R. Br.=**Premna tomentosa** Blanco op. cit. ed. 2 (1845) 342; ed. 3, 2 (1878) 269, non Wall.=**PREMNA CUMINGIANA** Schauer.

Blanco's description is entirely inadequate, but *Premna cumingiana* Schauer, which is not uncommon in the provinces contiguous to Manila, is undoubtedly the species intended by him. It is the whole basis of *Premna cardiophylla* Schauer, and Schauer's species, which was published merely as a new name for *Premna cordata* Blanco (non R. Br.), thus becomes a synonym of *Premna cumingiana* Schauer.

Illustrative specimens from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 681*); Rizal Province, Luzon, June, 1916 (*Merrill: Species Blancoanae No. 932*).

VITEX Linnaeus

VITEX TRIFOLIA Linn.; Blanco Fl. Filip. (1837) 513; ed. 2 (1845) 358; ed. 3, 2 (1878) 297, *t. 226* (poor).

Blanco correctly interpreted the Linnean species which is common along the seashore throughout the Philippines. It is commonly known as *lagundi*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 302*).

Vitex repens Blanco Fl. Filip. (1837) 513 (sp. nov.); ed. 2 (1845) 358; ed. 3, 2 (1878) 297=**VITEX TRIFOLIA** Linn. var. **OVATA** (Thunb.) (*V. ovata* Thunb., *V. trifolia* Linn. var. *unifoliolata* Schauer).

This species is not uncommon on sandy beaches along the seashore, and is widely distributed in the Philippines. Although very distinct in habit, and in its leaves usually reduced to a single leaflet, I doubt very much if it is specifically distinct from the erect *Vitex trifolia* Linn.

Illustrative specimen from Bauang, Batangas Province, Luzon, February, 1915, there known as *lagunding dagat* from *lagundi* (*Vitex trifolia*) and *dagat* (ocean) (*Merrill: Species Blancoanae No. 814*).

Vitex leucoxylon Blanco Fl. Filip. (1837) 516 (*leucoxilon*); ed. 2 (1845) 359; ed. 3, 2 (1878) 300, *t. 228*, non Linn.=**VITEX NEGUNDO** Linn.

Vitex negundo Linn. is common and widely distributed in the Philippines at low and medium altitudes, probably introduced. Blanco's *Vitex leucoxylon* is, in part only, referable here. His

description applies unmistakably to two different species, the "arbolillos" from Mandaloyan and Pangasinan (*V. negundo*), and the tree growing in the forests which is probably *Vitex parviflora* Juss. (*V. littoralis* Decne.); the native name *lagundi* goes with the former, and the name *molavin* with the latter.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 440*).

Vitex altissima Blanco Fl. Filip (1837) 516; ed. 2 (1845) 359; ed. 3, 2 (1878) 299, *t. 227*, non Linn. f.=**VITEX PARVIFLORA** Juss. (*V. littoralis* Dcne.).

Vitex geniculata Blanco op. cit. 514 (sp. nov.); 358; 299=**VITEX PARVIFLORA** Juss.

Vitex latifolia Blanco op. cit. 514 (sp. nov.); 358; 298, non Mill.=**VITEX PARVIFLORA** Juss.

There is no doubt in my mind, after studying our very full series of Philippine *Vitex*, and Blanco's descriptions, that the three species described by Blanco are all referable to the common *Vitex parviflora* Juss. (*V. littoralis* Decne.). In both *Vitex altissima* and *V. geniculata* I interpret Blanco's description to include 3-foliolate and 5-foliolate leaves, which is probably due to the inclusion of *Vitex turczaninowii* Merr., for *Vitex parviflora* invariably has 3-foliolate leaves. Fernandez-Villar's reduction of *Vitex latifolia* Blanco to *V. pubescens* Vahl is certainly incorrect, for Blanco's description does not apply to Vahl's species, and moreover *Vitex pubescens* is not found in Luzon; the type of *V. latifolia* Blanco was from San Mateo, not far from Manila. *Vitex parviflora* Juss. is very common and widely distributed in the Philippines and yields the very hard timber commercially known as *molave* or *molauin*.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 340*).

GMELINA Linnaeus

Gmelina asiatica Blanco Fl. Filip. (1837) 492; ed. 2 (1845) 344; ed. 3, 2 (1878) 274, non Linn.=**GMELINA PHILIPPENSIS** Cham. in Linnaea 7 (1832) 107.

Gmelina inermis Blanco op. cit. 493 (sp. nov.); 345; 274, *t. 215*=**GMELINA PHILIPPENSIS** Cham.

Fernandez-Villar considered that Blanco correctly interpreted the Linnean species *Gmelina asiatica* and reduced to it *G. philippensis* Cham., but the Philippine form is distinct. He also reduced *G. inermis* Blanco to *G. villosa* Roxb., but there is no justification for this reduction, as Blanco merely states "Ramas sin espinas. Hojas anchas, lanceoladas. En lo demas como la

especie anterior;" he merely described a spineless or nearly spineless form of *G. philippensis*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 122*).

CLERODENDRON Linnaeus

Clerodendron fortunatum Blanco Fl. Filip. (1837) 508; ed. 2 (1845) 354; ed. 3, 2 (1878) 291, *t. 223* (as *C. blancoi* Naves), non Linn.=**CLERODENDRON MINAHASSAE** Teysm. & Binn. (*Clerodendron blancoi* **Naves, *C. infortunatum* F.-Villar, non Gaertn.).**

This species is common on the dry hills about Manila and is widely distributed in the Philippines at low altitudes, although otherwise known only from Celebes. I first considered the species as *Clerodendron minahassae* T. & B. [For. Bur. (Philip.) Bull. 1 (1903) 52] and later [Govt. Lab. (Philip.) Publ. 35 (1905) 62] considered the Philippine form to be distinct and retained it under Naves's name *Clerodendron blancoi*. I am now of the opinion that my original identification was correct and that the Philippine form is the same as *Clerodendron minahassae* T. & B.

Illustrative specimens from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 80*); Batangas Province, Luzon (*Merrill: Species Blancoanae* No. *432*).

Volkameria grandiflora Blanco Fl. Filip. (1837) 512 (sp. nov.); ed. 2 (1845) 357; ed. 3, 2 (1878) 295 (non *Clerodendron grandiflorum* Schauer)= **CLERODENDRON MACROSTEGIUM** Schauer.

This reduction was made by Fernandez-Villar and is certainly the correct disposition of Blanco's species. The specific name *grandiflorum* is invalidated in *Clerodendron* by *C. grandiflorum* Schauer and *C. grandiflorum* Salisb.

Illustrative specimen from Santa Inez, Rizal Province, Luzon, November, 1916 (*Merrill: Species Blancoanae No. 1026*).

Clerodendron capsulare Blanco Fl. Filip. (1837) 509 (sp. nov.); ed. 2 (1845) 355; ed. 3, 2 (1878) 292, *t. 224*=**CLERODENDRON COMMERSONII** (Poir.) Spreng. (*C. neriifolium* Wall.).

This species is common along muddy shores and tidal streams throughout the Philippines. It is generally retained as a species distinct from *C. inerme* Gaertn., but if distinct, then Poiret's specific name is the older. The type of *Volkameria commersonii* Poir. was from the Philippines; see Merrill in Philip. Journ. Sci. 7 (1912) Bot. 245.

Illustrative specimen from Bauang, Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 813*).

Volkameria inermis Blanco Fl. Filip. (1837) 511, non Linn.=**Volkameria casopanguil** Blanco op. cit. ed. 2 (1845) 356 (*Bolkameria*) (sp. nov.); ed. 3, 2 (1878) 294, *t. 173*=**CLERODENDRON INTERMEDIUM** Cham. in Linnaea 7 (1832) 150.

This species is common and widely distributed in the Philippines at low and medium altitudes and is commonly known to the Tagalogs as *casopanguil.* There is no doubt whatever as to the identity of Blanco's *Volkameria casopanguil,* and further no doubt whatever as to its identity with *Clerodendron intermedium* Cham., the type of which was from Luzon, either the Province of Cavite or Batangas.

Illustrative specimen from Los Baños, Laguna Province, Luzon, June 25, 1914, *comm. E. Quisumbing* (*Merrill: Species Blancoanae No. 43*).

Ligustrum quadriloculare Blanco Fl. Filip. (1837) 10 (sp. nov.); ed. 2 (1845) 7; ed. 3, 1 (1877) 14, *t. 225*=**CLERODENDRON QUADRILOCULARE** (Blanco) Merr. in Govt. Lab. Publ. (Philip.) 36 (1906) 63 (*Clerodendron blancoanum* F.-Vill., *C. navesianum* Vid.).

This species is widely distributed in Luzon and presents considerable variation. It is apparently closely allied to *C. longiflorum* Dcne. of Timor.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 434*).

SYMPHOREMA Roxburgh

Balibai Blanco Fl. Filip. (1837) 406=**Litsea luzonica** Blanco Fl. Filip. ed. 2 (1845) 284 (*Litsaea*) (sp. nov.); ed. 3, 2 (1878) 162=**SYMPHOREMA LUZONICUM** (Blanco) F.-Vill.

This species is common and widely distributed in Luzon at low altitudes and has received the following names at various times: *Sczegleewia luconiensis* Turcz. (1862); *Symphorema glabrum* Hassk. (1865); *S. luzoniensis* Vid. (1885); and *S. cumingianum* Briq. (1894). Blanco's specific name is much the older and should be retained.

Illustrative specimen from Los Baños, Laguna Province, Luzon, *comm. F. C. Gates,* March, 1914 (*Merrill: Species Blancoanae No. 467*).

AVICENNIA Linnaeus

Avicennia nitida Blanco Fl. Filip. (1837) 504, non Jacq.=**Avicennia tomentosa** Jacq.; Blanco op. cit. ed. 2 (1845) 353; ed. 3, 2 (1878) 289, *t. 73*=**AVICENNIA OFFICINALIS** Linn.

A characteristic tree found along the seashore throughout the Philippines. It is universally known as *api-api.*

Illustrative specimen from Tayabas Province, Luzon, April, 1912 (*Merrill: Species Blancoanae No. 583*).

LABIATAE

ROSMARINUS Linnaeus

ROSMARINUS OFFICINALIS Linn.; Blanco Fl. Filip. (1837) 20; ed. 2 (1845) 15; ed. 3, 1 (1877) 28, *t. 94*.

The Linnean species was correctly interpreted by Blanco. It was introduced into the Philippines at an early date by the Spaniards and is highly prized by the natives for medicinal purposes. It is extensively grown in sandy soil at Parañaque for sale in Manila and is universally known in the Philippines under its Spanish name, *romero*.

Illustrative specimen from Parañaque, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 65*).

LEUCAS R. Brown

Phlomis zeylanica Blanco Fl. Filip. (1837) 475 (*ceilanica*); ed. 2 (1845) 331; ed. 3, 2 (1878) 248, non Linn.=**LEUCAS LAVANDULIFOLIA** Smith (*L. linifolia* Spreng.).

A very common weed in the settled areas at low altitudes in the Philippines, certainly introduced. Blanco's *Phlomis zeylanica* was reduced by Fernandez-Villar to *Leucas aspera* Spreng., a species also widely distributed in the Archipelago, but less common than *L. lavandulifolia* Smith. I consider that the description applies better to Smith's than to Sprengel's species.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 324*).

LEONURUS Linnaeus

Stachys artemisia Lour.; Blanco Fl. Filip. (1837) 476; ed. 2 (1845) 331 (*Starchis*); ed. 3, 2 (1878) 249, *t. 259*=**LEONURUS SIBIRICUS** Linn.

Blanco was correct in his interpretation of Loureiro's species, but it is a synonym of the older *Leonurus sibiricus* Linn. An introduced weed in the Philippines, widely distributed but of local occurrence in the settled areas of the Archipelago at low and medium altitudes.

Illustrative specimen from San Mateo, Rizal Province, Luzon, November, 1915 (*Merrill: Species Blancoanae No. 947*).

ANISOMELES R. Brown

Phlomis alba Blanco Fl. Filip. (1837) 474; ed. 2 (1845) 330; ed. 3, 2 (1878) 247, non Forsk.=**ANISOMELES INDICA** (Linn.) O. Ktze. (*A. ovata* R. Br.).

This species is widely distributed in the settled areas at low altitudes, in and about towns; certainly introduced.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, there known as *cadling parang*, and occasionally still called *taling-harap*, the native name cited by Blanco (*Merrill: Species Blancoanae No. 612*).

SALVIA Linnaeus

Salvia violacea Blanco Fl. Filip. ed. 2 (1845) 14 (sp. nov.); ed. 3, 1 (1877) 27, non Ruiz & Pav.=? **SALVIA PLEBEIA** R. Br.

This reduction follows Fernandez-Villar who, however, definitely referred it to R. Brown's species. Blanco described it from specimens observed near the Guadalupe convent, near Manila, where it appeared immediately following a fair, or a large gathering of the Chinese. A casual plant, probably of Chinese origin, now, however, not to be found in any region near Manila, and one that has so far been collected in the Archipelago only by *Cuming*.

MENTHA Linnaeus

Mentha crispa Blanco Fl. Filip. (1837) 474; ed. 2 (1845) 330; ed. 3, 2 (1878) 246, non Linn.=**MENTHA ARVENSIS** Linn.

This European mint, apparently introduced into the Philippines at an early date in colonial history, is found only in cultivation in the Archipelago and rarely produces flowers here. It is universally known in the Philippines under its Spanish name, *yerba buena*.

Illustrative specimen from Manila, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 840*).

POGOSTEMON Desfontaines

Mentha cablin Blanco Fl. Filip. (1837) 473 (sp. nov.)=**Mentha auricularia** Blanco op. cit. ed. 2 (1845) 329; ed. 3, 2 (1878) 245, non Linn.=**POGOSTEMON CABLIN** (Blanco) Benth.

This species yields patchouli of commerce as shown by Sir D. Prain, Kew Bull. (1908) 78. Synonyms are *P. patchouly* Pellet. (1845), *P. suavis* Ten. (1847), and *P. patchouli* Hook. (1849). It is commonly found in cultivation in the Philippines, but is never grown on a commercial scale; it frequently produces flowers in the Archipelago, but in other countries anthesis is apparently decidedly rare. It has been found several times thoroughly established at considerable distances from settled areas, but there is little doubt that the species has been introduced into the Archipelago and is not a true native; see Merrill in Philip. Journ. Sci. 7 (1912) Bot. 345.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 112*).

HYPTIS Jacquin

Marrubium indicum Blanco Fl. Filip. (1837) 477; ed. 2 (1845) 332; ed. 3, 2 (1878) 250, non Burm. f.=**HYPTIS SUAVEOLENS** (Linn.) Poir.

An early introduction from Mexico through the medium of the Acapulco-Manila galleons and now a dominant weed in and about towns throughout the Archipelago.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 447*).

Thymus biserratus Blanco Fl. Filip. (1837) 478 (sp. nov.)=**Pycnanthemum subulatum** Blanco op. cit. ed. 2 (1845) 333 (nom. nov.); ed. 3, 2 (1878) 251, *t. 204*=**HYPTIS BREVIPES** Poir.

This species, of Mexican origin, is common and widely distributed in the Philippines at low and medium altitudes and is one of the characteristic weeds of the settled areas.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 478*).

Pycnanthemum elongatum Blanco Fl. Filip. ed. 2 (1845) 333 (sp. nov.); ed. 3, 2 (1878) 252=**HYPTIS SPICIGERA Lam.**

This tropical American weed was apparently introduced into the Philippines at an early date and is now widely distributed in the settled areas of the Archipelago, although it is of local occurrence.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 108*).

Thymus virginicus Blanco Fl. Filip. (1837) 478, non Linn.=**Pycnanthemum decurrens** Blanco op. cit. ed. 2 (1845) 333 (sp. nov.); ed. 3, 2 (1878) 251, *t. 294*=**HYPTIS CAPITATA** Jacq. (*H. mariannarum* Briq.).

This species was introduced into Guam and the Philippines at an early date through the medium of the Acapulco-Manila galleons; it is now a very common weed and is distributed throughout the Philippines in the settled areas at low altitudes. The name *Pycnanthemum decurrens* Blanco does not appear in Index Kewensis or any of the Supplements to date.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 472*).

COLEUS Loureiro

Coleus suganda Blanco Fl. Filip. (1837) 438 (sp. nov.); ed. 2 (1845) 337; ed. 3, 2 (1878) 259=**COLEUS AMBOINICUS** Lour. Fl. Cochinch. (1790) 372 (*C. aromaticus* Benth.).

This species is widely distributed in the Philippines, but occurs in the Archipelago only as an occasionally cultivated plant; certainly introduced. It very rarely produces flowers. The species

is of interest as it is the type of the genus *Coleus*. It is generally known under the Tagalog name *suganda*, and under the Spanish names *orégano* and *clavo*.

Illustrative specimen from Maragondong, Cavite Province, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 129*).

Coleus grandifolius Blanco Fl. Filip. (1837) 482 (sp. nov.); ed. 2 (1845) 336; ed. 3, 2 (1878) 258, *t. 208*, non Benth.=**COLEUS BLUMEI** Benth.

This species was reduced by Fernandez-Villar to *Coleus acuminatus* Benth., which was based on Philippine specimens, but which is manifestly specifically distinct from the form Blanco described. The cultivated form with leaves uniformly brownish-purple is the one Blanco described: "Las hojas * * * son de color hermoso morado obscuro," and this form is still quite generally found in cultivation, never wild, in the Philippines; it is universally known to the Tagalogs as *mayana*.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 786*).

COLEUS PUMILUS Blanco Fl. Filip. (1837) 482 (sp. nov.); ed. 2 (1845) 336; ed. 3, 2 (1878) 257 (*C. gaudichaudii* Briq.).

This species was reduced by Fernandez-Villar to *Coleus acuminatus* Benth., but the form that Blanco described is entirely different from that of Bentham. *Coleus gaudichaudii* Briq. in Ann. Conserv. Jard. Bot. Genève 2 (1898) 237, the type of which was from the Philippines, is the same as Blanco's species. *Coleus pumilus* Blanco is common on ledges and boulders in thickets near the Barrio of Pineda, Pasig, and is also occasionally cultivated in Manila; Blanco states that this species was common in Pasig. This is the only species of *Coleus* that is spontaneous within many kilometers of Manila; most of the species found in the Philippines are from the mossy forests on the medium and higher mountains.

Illustrative specimen from the Barrio of Pineda, Pasig, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 190*).

MOSCHOSMA Reichenbach

Ocimum tenuiflorum Blanco Fl. Filip. (1837) 481 (*Ocymum*); ed. 2 (1845) 335; ed. 3, 2 (1878) 255, non Linn.=**MOSCHOSMA POLYSTACHYUM** (Linn.) Benth.

Ocimum tenuiflorum Blanco is the same as Burman's species of this name, but not of Linnaeus. The species is widely distributed in the settled areas of the Philippines at low altitudes but is nowhere abundant.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 423*).

OCIMUM Linnaeus

Ocimum americanum Blanco Fl. Filip. (1837) 480 (*Ocymum*); ed. 2 (1845) 335; ed. 3, 2 (1878) 254, *t. 407*, non Linn.=**OCIMUM BASILICUM** Linn.

Ocimum citriodorum Blanco op. cit. ed. 2 (1845) 591 (*Ocymum citrodorum*) (sp. nov.); ed. 3, 2 (1878) 256=**OCIMUM BASILICUM** Linn.

Ocimum basilicum Linn. is of wide distribution in the Philippines, cultivated and sometimes subspontaneous. It is certainly a purposely introduced plant in the Archipelago. The description of *Ocimum citriodorum* Blanco is very short and imperfect, but the species belongs here with reasonable certainty.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914, here known as *solasi* (*Merrill: Species Blancoanae No. 437*).

OCIMUM SANCTUM Linn.; Blanco Fl. Filip. (1837) 480; ed. 2 (1845) 334; ed. 3, 2 (1878) 254, *t. 257.*

Ocimum album Blanco op. cit. (1837) 479, non Linn.=**Ocimum virgatum** Blanco op. cit. ed. 2 (1845) 334; ed. 3, 2 (1878) 253, non Linn.=**OCIMUM SANCTUM** Linn.

Ocimum flexuosum Blanco op. cit. 481; 335; 255; non Linn.=**OCIMUM SANCTUM** Linn.

After a careful consideration of Blanco's description of the five "species" of true *Ocimum* that he included in his Flora de Filipinas together with an examination of our full series of specimens, I am convinced that but two species are represented, *Ocimum basilicum* Linn. and *O. sanctum* Linn. To the former I have referred *Ocimum americanum* Blanco and *O. citriodorum* Blanco, and to the latter the ones enumerated above. It is common and widely distributed in the Philippines, cultivated and at least subspontaneous; certainly introduced, but of prehistoric introduction.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 400*).

SOLANACEAE

CAPSICUM Linnaeus

Capsicum minimum Roxb.; Blanco Fl. Filip. (1837) 133; ed. 2 (1845) 95; ed. 3, 1 (1877) 174, *t. 47*=**CAPSICUM FRUTESCENS** Linn.

A native of tropical America, introduced into the Philippines by the Spaniards, and now cultivated and subspontaneous throughout the settled areas in the Archipelago. It is universally known as *sili*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 441*).

LYCOPERSICUM Miller

Solanum lycopersicum Linn.; Blanco Fl. Filip. (1837) 134; ed. 2 (1845) 96; ed. 3, 1 (1877) 176, *t. 43*=**LYCOPERSICUM ESCULENTUM** Mill.

The tomato was introduced from Mexico at an early date by the Spaniards and is now naturalized and widely distributed in the Philippines. The form described by Blanco is the wild or somewhat cultivated one with fruits about 1 cm in diameter, as represented by the illustrative material distributed. It is generally known as *camatis*.

Illustrative specimen from Baguio, Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 14*).

PHYSALIS Linnaeus

PHYSALIS PERUVIANA Linn.; Blanco Fl. Filip. (1837) 138; ed. 2 (1845) 98; ed. 3, 1 (1877) 180.

So far as I can determine Blanco correctly interpreted the Linnean species, but I have never observed *Physalis peruviana* at low altitudes in the Philippines, and I infer from Blanco's statements that his plant was a low-altitude one.

Illustrative specimen from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 463*).

Solanum serratum Blanco Fl. Filip. (1837) 136 (sp. nov.); ed. 2 (1845) 97; ed. 3, 1 (1877) 179, *t. 50*=**PHYSALIS LANCEIFOLIA** Nees (1831).

Blanco's species is manifestly a *Physalis* from his description; it was reduced by Fernandez-Villar to *Physalis indica* Lam.= *P. minima* Linn., to which the description certainly does not apply. The species is manifestly the Philippine and Guam form that has been referred by me to *Physalis lanceifolia* Nees, the type of which was from Peru, but which is also found in Mexico. It was undoubtedly introduced into the Philippines and Guam through the medium of the Acapulco-Manila galleons.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 730*).

Physalis pubescens Blanco Fl. Filip. (1837) 138; ed. 2 (1845) 98; ed. 3, 1 (1877) 181, non Linn=**PHYSALIS MINIMA** Linn.

This species, undoubtedly introduced into the Philippines from Mexico, is widely distributed in the settled areas of the Archipelago at low altitudes and presents considerable variation. Specimens collected in the wet season usually have much larger leaves than those collected, even from the same plants, in the dry season; the material distributed herewith was collected

when the dry season was well advanced. Fernandez-Villar considered that Blanco correctly interpreted *Physalis pubescens* Linn.

Illustrative specimen from Manila, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 796*).

SOLANUM Linnaeus

SOLANUM MELONGENA Linn.; Blanco Fl. Filip. (1837) 135; ed. 2 (1845) 96; ed. 3, 1 (1877) 177, *t. 265*.

The Linnean species was correctly interpreted by Blanco. It occurs in the Philippines only as a cultivated plant and, judging from its native name, *talong*, is undoubtediy of prehistoric introduction into the Archipelago.

Illustrative specimen from Antipolo, Rizal Province, Luzon, Januaiy, 1914 (*Merrill: Species Blancoanae No. 623*).

SOLANUM NIGRUM Linn.; Blanco Fl. Filip. (1837) 134, ed. 2 (1845) 96, ed. 3, 1 (1877) 175.

Blanco correctly interpreted the Linnean species which is widely distributed in the settled areas of the Philippines from sea level to an altitude of at least 1,800 meters. It is used by the Filipinos as a pot herb.

Illustrative specimen from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 464*).

Solanum zeylanicum Blanco Fl. Filip. (1837) 136 (*zeilanicum*); ed. 2 (1845) 97; ed. 3, 1 (1877) 178, non Scop.=**SOLANUM FEROX** Linn.

This species is widely distributed in the Philippines, but from its occurrence is certainly an introduced plant in the Archipelago.

Illustrative specimen from Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 465*).

Solanum mauritianum Blanco Fl. Filip. (1837) 134; ed. 2 (1845) 96; ed. 3, 1 (1877) 176, *t. 86*, non Willd., nec Scop.=**SOLANUM VERBASCIFOLIUM** Linn.

This species is common and widely distributed in the Philippines, in the open country, in thickets, etc., but not in the primeval forest.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 48*).

Solanum coagulans Blanco Fl. Filip. (1837) 135; ed. 2 (1845) 97; ed. 3, 1 (1877) 177, *t. 49*, non Jacq.=**SOLANUM CUMINGII** Dunal.

This species was reduced by Fernandez-Villar to *Solanum sanctum* Linn., which is not known from the Philippines, while in my former consideration of Blanco's species I expressed the

opinion that it was probably only a variety of *Solanum melongena* Linn. It is identical with *Solanum cumingii* Dunal, the type of which was from the Philippines. It is widely distributed in and about towns at low altitudes in the Philippines.

Illustrative specimen from Baliuag, Bulacan Province, Luzon, December, 1915, there known as *tarambulo* (*Merrill: Species Blanocanae No. 938*).

Solanum sinense Blanco Fl. Filip. (1837) 137 (sp. nov.) = **SOLANUM TUBEROSUM** Linn.; Blanco op. cit. ed. 2 (1845) 97; ed. 3, 1 (1877) 179.

The species that Blanco described in the first edition of his Flora de Filipinas as a new species, *Solanum sinense*, he correctly reduced in the second edition of the same work to *Solanum tuberosum* Linn. His specific name *sinense* was derived from the fact that he considered that the plant was a native of China, or at least was introduced into the Philippines from China. The potato thrives in the Philippines only at medium and higher altitudes and is grown successfully in various parts of the Mountain Province, Luzon. The tubers, however, are small in size and inferior in quality.

Illustrative specimen from Baguio, Benguet Subprovince, Luzon, July, 1915, *comm. H. Sandkuhl* (*Merrill: Species Blancoanae No. 948*).

DATURA Linnaeus

DATURA FASTUOSA Linn.; Blanco Fl. Filip. (1837) 100; ed. 2 (1845) 73; ed. 3, 1 (1877) 136, *t. 35*.

The Linnean species was apparently correctly interpreted by Blanco. It occurs as an occasional weed in and about towns, especially near the sea, but is not nearly as abundant in the Philippines as is the form with white flowers, *D. fastuosa* var. *alba* (Nees). The suffix *itim* on the native name *talampunay na itím* means black, in reference to the purple flowers. The form with double corollas is cultivated in the Philippines.

Illustrative specimen from Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 805*).

Datura metel Blanco Fl. Filip. (1837) 98; ed. 2 (1845) 72; ed. 3, 1 (1877) 136, *t. 34*, non Linn. = **DATURA FASTUOSA** Linn. var. **ALBA** (Nees) **C. B. Clarke.**

This form is common in waste places in and about towns throughout the Philippines, but is certainly an introduced plant, although probably of prehistoric introduction. Its common (Tagalog) name in and about Manila is *talongpunay*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 529*).

NICOTIANA Linnaeus

NICOTIANA TABACUM Linn.; Blanco Fl. Filip. (1837) 101; ed. 2 (1845) 74; ed. 3, 1 (1877) 138, *t. 36*.

Tobacco is extensively cultivated in the Philippines; the Linnean species was correctly interpreted by Blanco.

Illustrative specimen from Umingan, Pangasinan Province, May, 1914 (*Merrill: Species Blancoanae No. 196*).

Nicotiana pusilla Blanco Fl. Filip. (1837) 100; ed. 2 (1845) 74; ed. 3, 1 (1877) 137, non Linn.=**NICOTIANA** sp.

Fernandez-Villar reduced this to *Nicotiana rustica* Linn., but there is little justification for this. All that can be determined definitely is that Blanco had a species of *Nicotiana*, perhaps not distinct from *N. tabacum* Linn. His very imperfect description was from a single specimen observed in a Manila garden.

Nicotiana frutescens Blanco Fl. Filip. (1837) 101=**Nicotiana fruticosa** Blanco op. cit. ed. 2 (1845) 74; ed. 3, 1 (1877) 138, non Linn.=?

A form of wholly doubtful status, both considerations of the species being *nomina nuda*. It is evident that *Nicotiana frutescens* of the first edition, is merely a slip of the pen for *fruticosa*, as manifestly Blanco thought he had the Linnean species, and did not intend to propose a new one. His consideration of the species, there being no description, is translated as follows: I can say nothing regarding this species other than that it exists, or did exist within a few years, in San Jose, Batangas Province, Luzon, in the place called Bongahan. I do not know whether or not it has been introduced. It might be that to the natives it resembles tobacco, but really is not it.

SCROPHULARIACEAE

LINDENBERGIA Lehmann

Stemodia ruderalis Blanco Fl. Filip. (1837) 498; ed. 2 (1845) 348; ed. 3, 2 (1878) 281, *t. 378* (poor), non Retz., nec Vahl=**LINDENBERGIA PHILIPPENSIS (Cham.) Benth.**

This species is widely distributed in the Philippines, extending from sea level to an altitude of at least 1,500 meters. It grows on walls, cliffs, etc., and is common on the old walls surrounding Intramuros (the Walled City), Manila.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 193*).

BACOPA Aublet

Thunbergia stolonifera Blanco Fl. Filip. (1837) 517 (sp. nov.)=**Calytriplex obovata** Blanco op. cit. ed 2 (1845) 361; ed. 3, 2 (1878) 302, *t. 230*, non Ruiz & Pav.=**BACOPA MONNIERA** (Linn.) Wettst. (*Herpestis monniera* HBK.).

A species fairly common in muddy places near tidal streams about Manila. *Calytriplex obovata* Ruiz & Pav. is generally cited as a synonym of *Bacopa monniera*, but Hooker f., Flora of British India 4 (1884) 272, states that it is very different from *Herpestis monniera* HBK.=*Bacopa monniera* Wettst.

Illustrative specimen from Manila, Luzon, April 15, 1914 (*Merrill: Species Blancoanae No. 239*).

LIMNOPHILA R. Brown

Tala odorata Blanco Fl. Filip. (1837) 485 (gen. et sp. nov.); ed. 2 (1845) 388; ed. 3, 2 (1878) 262=LIMNOPHILA RUGOSA (Roth) Merr. (*Limnophila roxburghii* G. Don).

This species is the type of the genus *Tala* of Blanco and was reduced by Fernandez-Villar to *Limnophila menthastrum* Benth. I consider it, however, rather the same as *L. roxburghii* G. Don= *L. rugosa* (Roth) Merr., at least the form of that species that has been credited to the Philippines. The generic name *Tala* is from one of the Tagalog names of this and allied species.

Illustrative specimen from Angat, Bulacan Province, September, 1913 (*Merrill: Species Blancoanae No. 626*).

Diceros stoloniferus Blanco Fl. Filip. ed. 2 (1845) 349 (sp. nov.); ed. 3, 2 (1878) 282=LIMNOPHILA STOLONIFERA (Blanco) comb. nov.

Blanco's species was reduced by Fernandez-Villar to *Limnophila repens* Benth., a species not known from the Philippines but one to which *Limnophila stolonifera* is apparently allied. In Index Kewensis the reduction is to *Limnophila conferta* Benth., a species also not known from the Philippines, and one very different from my interpretation of Blanco's *Diceros stoloniferus*. As I have interpreted Blanco's species, and there is every reason to believe that this interpretation is correct, the species seems to be a valid one of *Limnophila*. Blanco's specimens were from Guadalupe, near Manila, there known as *orégano*, but although I have been unable to find it in that locality, specimens from the neighborhood of Antipolo, also known as *orégano*, agree with Blanco's description in all characters including habitat and time of flowering.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914, there known as *orégano* (*Merrill: Species Blancoanae No. 201*).

Limnophila myriophylloides Llanos Frag. Pl. Filip. (1851) 78; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 60, non Roth=LIMNOPHILA GRATIOLOIDES R. Br.

This form, widely distributed in the Philippines, was reduced by Fernandez-Villar to *Limnophila gratioloides* R. Br. which is

apparently the correct disposition of it. Like many submerged or partly submerged aquatic plants, it is exceedingly variable in its vegetative characters.

DOPATRIUM Hamilton

Kyrtandra aristata Blanco Fl. Filip. (1837) 18 (sp. nov.) = **Cyrtandra aristata** Blanco op. cit. ed. 2 (1845) 13 (*Cirtandra*); ed. 3, 1 (1877) 24 = ? **DOPATRIUM JUNCEUM** (Roxb.) **Ham.**

Blanco's description is the whole basis of *Didymocarpus aristata* (Blanco) F.-Vill. Novis. App. (1883) 150, and of *Dopatrium aristatum* Hassk. in Flora 47 (1864) 56. Among all the Philippine species that grow in the habitat indicated, that at all approach Blanco's description, *Dopatrium junceum* Ham. is the only one that I can suggest as its proper place of reduction. It most certainly is no gesneriaceous plant, as considered by Fernandez-Villar, and while it may ultimately prove to be distinct from *Dopatrium junceum* Ham., I am confident that Hasskarl was correct in referring it to this genus. Blanco's material was from Malinta, near Manila, where it grew in open wet places at low altitudes.

TORENIA Linnaeus

Vandellia multiflora Blanco Fl. Filip. (1837) 505, non G. Don = **TORENIA BLANCOI nom. nov.**

This species was reduced by Fernandez-Villar to *Torenia asiatica* Linn., a species that does not extend to the Philippines. It is not included in the second or third editions of the Flora de Filipinas. Blanco states that his species is "común en todas partes," but as here interpreted this is not true, as so far the species has appeared in our collections from but three localities. Except for this statement his description applies almost exactly, although the flowers are not especially numerous. The plant is prostrate, spreading, the branches 4-angled, up to 20 cm in length. Leaves broadly ovate, short-petioled, 1.5 cm long or less, rounded or obtuse, rather coarsely toothed, glabrous or slightly hairy. Flowers pale bluish-purple, axillary, solitary, the pedicels pubescent, 5 mm long or less. Calyx prominently 5-ridged, not winged, ciliate-hirsute, about 6 mm long, in fruit about 8 mm long. Corolla 1 cm in length. Capsule about as long as the calyx, the calyx-teeth 5, lanceolate, acuminate, equal, 1.5 mm long. Its alliance seems to be with *Torenia benthamiana* Hance, but the Philippine species has much smaller flowers.

Illustrative specimen from near Fort William McKinley, Rizal Province, Luzon, October 18, 1914, on boulders in bamboo thickets (*Merrill: Species Blancoanae No. 157*).

Legazpia triptera Blanco Fl. Filip. ed. 2 (1845) 339 (gen. et sp. nov.); ed. 3, 2 (1878) 264=**TORENIA POLYGONOIDES** Benth.

A species of wide distribution in the Philippines, generally found in forests at medium altitudes. The correctness of the reduction of Blanco's genus and species, the type of which was from Laguna Province, Luzon, cannot be doubted.

Illustrative specimen from Los Baños, Mount Maquiling, Laguna Province, Luzon, November, 1912 (*Merrill: Species Blancoanae No. 126*).

Mimulus violaceus Azaola ex Blanco Fl. Filip. ed. 2 (1845) 357 (sp. nov.); ed. 3, 2 (1878) 296=**TORENIA PEDUNCULARIS** Benth.

The description is short and imperfect, but there is every reason to believe that Fernandez-Villar was correct in reducing it to the common and widely distributed *Torenia peduncularis* Benth. The species was described by Azaola, not by Blanco.

LINDERNIA Allioni

(*Vandellia* Linnaeus)

Torenia paniculata Blanco Fl. Filip. (1837) 486 (sp. nov.); ed. 2 (1845) 339 (*Toremia*); ed. 3, 2 (1878) 265=**LINDERNIA CRUSTACEA (Linn.) F. Muell.**

Fernandez-Villar retained *Torenia paniculata* Blanco as a valid species, probably following Bentham (DC. Prodr. 10: 411). While in certain particulars Blanco's description does not fit *Lindernia crustacea* F.-Muell., I am convinced that this is the form that he intended by his description. The phrase, regarding the calyx, "con cerdas pequeñas terminadas con globos," should probably be translated as minute glandular-capitate hairs. This does not apply to *Vandellia crustacea* Benth. nor, so far as I know, to any other Philippine representative of this or allied genera, and the mistake is probably due to an error of observation or possibly to a mixture of specimens on the part of Blanco. *Lindernia crustacea* F.-Muell. is common and widely distributed throughout the settled areas of the Philippines.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 563*).

Vandellia soriana Blanco Fl. Filip. (1837) 506 (sp. nov.)=**Torenia soriana** Blanco op. cit. ed. 2 (1845) 340 (comb. nov.); ed. 3, 2 (1873) 266 *t. 368 bis* (upper figure, as *Vandellia diffusa* Blanco)=**LINDERNIA PUSILLA** (Thunb.) Merr. in Philip. Journ. Sci. 11 (1916) Bot. 312 (*Selago pusilla* Thunb., *Gratiola pusilla* Willd., *Vandellia scabra* Benth., *Lindernia scabra* Wettst.).

Fernandez-Villar retained this as a distinct species, *Vandellia soriana* Blanco, apparently following Bentham. I now consider

that it is merely the common *Lindernia pusilla* (Willd.) Merr., although I previously expressed the opinion that it was apparently the same as *Vandellia pedunculariS* Benth. The species is common and widely distributed at low altitudes in the settled areas of the Philippines, agrees with Blanco's description in all essentials, and is moreover distinctly bitter to the taste, a character indicated by Blanco.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 471*).

Torenia quinquenervis Llanos Frag. Pl. Filip. (1851) 76 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 59=**LINDERNIA PYXIDARIA** All.

This species was reduced by Fernandez-Villar to *Vandellia nervosa* Benth., which has not been found in the Philippines. So far as I can determine, from the descriptions and material available here, it is *Lindernia pyxidaria* All. Whatever else it is, the form distributed herewith is certainly *Torenia quinquenervis* Llanos. In addition to Llanos's record of *Torenia quinquenervis* from Calumpit, it has so far been found in but two other localities in the Philippines, a weed in rice paddies.

Illustrative specimen from Pasig, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 777*).

ILYSANTHES Rafinesque

(*Bonnaya* Link & Otto)

Kyrtandra personata Blanco Fl. Filip. (1837) 18 (sp. nov.)=**Cyrtandra personata** Blanco op. cit. ed. 2 (1845) 13 (*Cirtandra*) (comb. nov.); ed. 3, 1 (1877) 25=**ILYSANTHES SERRATA** (Roxb.) Urb.

Gratiola hyssopioides Blanco op. cit. 11; 8 (*hissopioides*); 16, non Linn.=**ILYSANTHES SERRATA** (Roxb.) Urb.

This species is widely distributed in the Philippines, in damp open places, at low and medium altitudes. Fernandez-Villar reduced *Cyrtandra personata* Blanco to *Bonnaya brachiata* Link & Otto, which is manifestly correct from Blanco's description, but reduced *Gratiola hyssopifolia* Blanco to *Bonnaya reptans* Spreng. Blanco's description of *Gratiola hyssopifolia* does not apply to Sprengel's species which has petioled leaves, while Blanco distinctly states: "Hojas * * * abrazando al tallo por la base." His description applies unmistakably to *Bonnaya brachiata* Link & Otto, which is a synonym of *Ilysanthes serrata* (Roxb.) Urb., so that the present reduction of the species is undoubtedly correct. Blanco's description of *Kyrtandra personata* typifies *Bonnaya personata* Hassk. in Flora 47 (1864) 56.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 67*).

Kyrtandra serrata Blanco Fl. Filip. (1837) 18 (sp. nov.)=? **ILYSANTHES ANTIPODA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 467.

Kyrtandra capsularis Blanco Fl. Filip. (1837) 17 (sp. nov.)=**Cyrtandra glaberrima** Blanco op. cit. ed. 2 (1845) 12 (*Cirtandra*) (nom. nov.); ed. 3, 1 (1877) 23=**ILYSANTHES ANTIPODA** (Linn.) Merr. Interpret. Herb. Amb. (1917) 467.

Kyrtandra serrata Blanco, excluded from the second edition, is a doubtful species on account of its very short description, but was probably correctly reduced to *Bonnaya veronicaefolia* Spreng.=*Ilysanthes antipoda* (Linn.) Merr. by Fernandez-Villar; I know of no other species growing near Manila to which Blanco's description applies, his material being from Malinta, a few miles north of Manila. *Kyrtandra capsularis* Blanco=*Cyrtandra glaberrima* Blanco is certainly identical with *Ilysanthes antipoda* (Linn.) Merr. The species is common and widely distributed in the open country, old rice paddies, etc., in the Philippines. Blanco's description of *Kyrtandra capsularis* typifies *Didymocarpus? blancoi* Hassk. in Flora 47 (1864) 55.

Illustrative specimen from Manila, Luzon, September, 1913, (*Merrill: Species Blancoanae No. 453*).

SCOPARIA Linnaeus

Scoparia dulcis Linn.; Blanco Fl. Filip. (1837) 55; ed. 2 (1845) 37; ed. 3, 1 (1877) 69, *t. 19*.

The Linnean species was correctly interpreted by Blanco. It is very common and widely distributed in the settled areas in the Philippines. Introduced from Mexico at an early date in colonial history.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 446*).

BIGNONIACEAE

DOLICHANDRONE Fenzl

Bignonia spathacea Linn.; Blanco Fl. Filip. (1837) 499=**Spathodea luzonica** Blanco op. cit. ed. 2 (1845) 350 (sp. nov.); ed. 3, 2 (1878) 284, *t. 242*=**DOLICHANDRONE SPATHACEA** (Linn.) K. Sch. (*D. rheedii* Seem.).

Blanco correctly interpreted the Linnean species in the first edition of his Flora de Filipinas, but in the second edition described the plant as a new species. It is found along tidal streams throughout the Philippines and is generally known as *tue*.

Illustrative specimen from Malabon, Rizal Province, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 514*).

RADERMACHERA Hasskarl

Millingtonia pinnata Blanco Fl. Filip. (1837) 501 (sp. nov.); ed. 2 (1845) 351; ed. 3, 2 (1878) 285=**RADERMACHERA PINNATA** (Blanco) Seem.

Millingtonia quadripinnata Blanco op. cit. 501 (sp. nov); 351; 286, *t. 252*=**RADERMACHERA PINNATA** (Blanco) Seem. (*Radermachera quadripinnata* Seem.).

Fernandez-Villar and others have retained Blanco's two species as distinct, under *Stercospermum pinnatum* and *S. quadripinnatum*. In 1908 I reduced the latter to the former which has merely page priority in the original place of publication; I can see no reason for any change from the conclusions previously reached, Philip. Journ. Sci. 3 (1908) Bot. 336–338. Blanco's *Millingtonia pinnata* was certainly based on imperfect, probably fragmentary, specimens. It is perhaps well to note again that the species never has pinnate or quadripinnate leaves, but either bi- or tripinnate ones. Its universal Tagalog name is *banaibanai*. It is widely distributed in Luzon and Mindoro at low and medium altitudes.

Illustrative specimen from Rizal Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 834*).

OROXYLUM Ventenat

Bignonia quadripinnata Blanco Fl. Filip. (1837) 499 (sp. nov.); ed. 2 (1845) 349; ed. 3, 2 (1878) 283, *t. 219*=**OROXYLUM INDICUM (Linn.) Vent.**

This species is common and widely distributed in the Philippines at low and medium altitudes.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 125*).

CRESCENTIA Linnaeus

Crescentia trifolia Blanco Fl. Filip. (1837) 489 (sp. nov.); ed. 2 (1845) 343; ed. 3, 2 (1878) 271, *t. 327*=**CRESCENTIA ALATA** HBK.

This Mexican species was introduced into Guam and into the Philippines by the Spaniards and still persists in cultivation in both, although now very rare in the Philippines. The Philippine species described by Blume, from leaf specimens, as *Otophora ? paradoxa* Bl. Rumphia 3 (1847) 146 is *Crescentia alata* HBK.

Illustrative specimen from Malabon, Rizal Province, Luzon, September, 1914, there known as *cruz-cruzan* (*Merrill: Species Blancoanae No. 515*).

PEDALIACEAE

SESAMUM Linnaeus

Sesamum indicum Linn.; Blanco Fl. Filip. (1837) 507; ed. 2 (1845) 353; ed. 3, 2 (1878) 290 *t. 273*=**SESAMUM ORIENTALE** Linn.

Blanco correctly interpreted the Linnean species, which is, however, a synonym of *Sesamum orientale* Linn., the latter having page priority. The species is somewhat cultivated in the Philippines, frequently found as an escape, and is certainly of prehistoric introduction. Its Tagalog name is *liñgá*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 615*).

OROBANCHACEAE

AEGINETIA Linnaeus

AEGINETIA INDICA Linn.; Blanco Fl. Filip. ed. 2 (1845) 342; ed. 3, 2 (1878) 270.

This species was correctly interpreted by Blanco. It occasionally occurs in sugar-cane fields in sufficient abundance to be considered as a pest, growing on the roots of the cane and causing decided damage to the crop.

Illustrative specimen from Nueva Vizcaya Province, Luzon, February, 1911 (*Merrill: Species Blancoanae No. 285*).

LENTIBULARIACEAE

UTRICULARIA Linnaeus

Utricularia calumpitensis Llanos Frag. Pl. Filip. (1851) 11 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 6=**UTRICULARIA FLEXUOSA** Vahl.

As Vahl's species is currently interpreted I can see no reason for distinguishing from it the Philippine form described by Llanos as *Utricularia calumpitensis;* the reduction was originally made by Fernandez-Villar. The species is widely distributed in the Philippines at low altitudes but is of rather local occurrence.

ACANTHACEAE

ELYTRARIA Vahl

Elytraria amara Blanco Fl. Filip. ed. 2 (1845) 8 (sp. nov.); ed. 3, 1 (1877) 15=**ELYTRARIA TRIDENTATA** Vahl.

This species is locally abundant in waste places in and about towns; introduced from Mexico at an early date. The following note written by the late C. B. Clarke in reference to a Philippine specimen, *Bur. Sci. 380 Mangubat*, which represents the

same species, is of interest: "This is sent named as *Elytraria squamosa* (Jacq.) Lindau in Perk. Frag. Fl. Philip. 38. An error is involved both as to the plant and as to the name. *Verbena squamosa* Jacq. Hort. Schoenb. 1: 3, *t. 5* has lanceolate-linear bracts and is *Elytraria caulescens* Nees in DC. Prodr. 11: 63. Mangubat's specimen has the bracts 3-toothed, very strongly so."

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 362*).

THUNBERGIA Linnaeus f.

Thunbergia subsagittata Blanco Fl. Filip. (1837) 518 (sp. nov.)=**THUNBERGIA FRAGRANS** Roxb.; Blanco op. cit. ed. 2 (1845) 360; ed. 3, 2 (1878) 301.

The species that Blanco described as new, *Thunbergia subsagittata,* in the first edition of his Flora de Filipinas, he correctly reduced in the second edition to the widely distributed and variable *Thunbergia fragrans* Roxb. It is common and widely distributed in the settled areas of the Philippines at low and medium altitudes.

Illustrative specimen from Lamao, Bataan Province, Luzon, December, 1915 (*Merrill: Species Blancoanae No. 963*).

HYGROPHILA R. Brown

Antirrhinum molle Blanco Fl. Filip. (1837) 503; ed. 2 (1845) 353; ed. 3, 2 (1878) 288, non Linn.=**HYGROPHILA PHLOMOIDES** Nees, **var. ROXBURGHII** C. B. Clarke.

This species is common in open grasslands, especially in fallow rice paddies in the vicinity of Manila, and is apparently widely distributed in the Philippines at low and medium altitudes. It was erroneously reduced by Fernandez-Villar to *Hygrophila undulata* Blume.

Illustrative specimen from Pasay, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 753*).

Antirrhinum comintanum Blanco Fl. Filip. (1837) 502 (sp. nov.); ed. 2 (1845) 352; ed. 3, 2 (1878) 287, *t. 363*=**HYGROPHILA SALICIFOLIA** (Vahl) Nees (*H. angustifolia* R. Br.).

This species is widely distributed in the Philippines at low altitudes and presents considerable variation. Blanco's description does not agree entirely with the illustrative material distributed herewith as the leaves are described by him as "vellosas por arriba, y en las márgenes, abrazando al tallo por

la base," yet undoubtedly the plant he described is a form of *Hygrophila salicifolia* Nees.

Illustrative specimens from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 166*); Bauang, Batangas Province, Luzon, February, 1915 (*Species Blancoanae No. 781*).

BLECHUM P. Browne

Ruellia uliginosa Blanco Fl. Filip. (1837) 494; ed. 2 (1845) 346; ed. 3, 2 (1878) 277, non Linn. f.=**BLECHUM BROWNEI** Juss.

This species of American origin is now widely distributed in the settled areas of the Philippines at low altitudes. It is also common in Guam and has extended to Formosa. It was undoubtedly introduced into Guam and into the Philippines through the medium of the Acapulco-Manila galleons.

Illustrative specimen from Pasig, Rizal Province, Luzon. November, 1914 (*Merrill: Species Blancoanae No. 187*).

HEMIGRAPHIS Nees

Ruellia repens Blanco Fl. Filip. (1837) 493; ed. 2 (1845) 345; ed. 3, 2 (1878) 276, non Linn.=**HEMIGRAPHIS STRIGOSA** (Nees) F.-Vill. (*H. repens* F.-Vill.).

Fernandez-Villar considered that Blanco's *Ruellia repens* represented a valid species of *Hemigraphis*, which he called *H. repens* (Blanco) F.-Vill. I can see no reason for considering the form Blanco described to be other than the widely distributed *Hemigraphis strigosa* (Nees) F.-Vill., which was originally described from Philippine specimens, and from which *Hemigraphis lanceolata* Clarke is probably not specifically distinct. Blanco's specimens were from Cebu.

LEPIDAGATHIS Willdenow

Ruellia secunda Blanco Fl. Filip. (1837) 495 (sp. nov.); ed. 2 (1845) 346; ed. 3, 2 (1878) 278=**LEPIDAGATHIS SECUNDA** (Blanco) Nees.

Lepidagathis secunda Nees was based on *Ruellia secunda* Blanco, the description amplified by reference to *Cuming 581* from Calauan, Laguna Province, Luzon. Blanco's specimens were from Pasig, Mandaloyon, and Santiago Point. It is the only species of the genus known to occur in the immediate vicinity of Manila and is to-day fairly abundant on some parts of the Mandaloyon estate and in Pasig. *Lepidagathis luzona* Nees is apparently identical with *L. secunda* Nees.

Illustrative specimen from Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 702*).

BARLERIA Linnaeus

Barreliera cristata Blanco Fl. Filip. (1837) 492; ed. 2 (1845) 344; ed. 3, 2 (1878) 273, *t. 214*, left hand figure=**BARLERIA CRISTATA** Linn.

Cultivated only, or spontaneous to a very slight degree, very rarely (or never?) producing seeds in the Philippines. It is extensively cultivated in Manila for trimmed hedges and is propagated by cuttings. Introduced.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 227*).

Barreliera prionitis Blanco Fl. Filip. (1837) 491; ed. 2 (1845) 343; ed. 3, 2 (1878) 272, *t. 214*, right hand figure=**BARLERIA PRIONITIS** Linn.

This species is locally abundant at low altitudes in the settled areas, certainly introduced. It is commonly known as *culanta.*

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 273*).

ACANTHUS Linnaeus

Acanthus doloariu Blanco Fl. Filip. (1837) 487 (sp. nov.)=**ACANTHUS ILICIFOLIUS** Linn.; Blanco op. cit. ed. 2 (1845) 341; ed. 3, 2 (1878) 267, *t. 153.*

This species is common and widely distributed in the Philippines along tidal streams, back of mangrove swamps, etc. Blanco correctly reduced his *Acanthus doloariu* of the first edition to *A. ilicifolius* Linn. in the second edition of his Flora de Filipinas. It is commonly known as *doloariu.*

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 636*).

GRAPTOPHYLLUM Nees

Justicia picta Linn.; Blanco Fl. Filip. (1837) 12; ed. 2 (1845) 9; ed. 3, 1 (1877) 18, *t. 8*=**GRAPTOPHYLLUM PICTUM** (Linn.) Griff.

Blanco correctly interpreted the Linnean species which is the form of *Graptophyllum pictum* (Linn.) Griff. (*G. hortense* Nees) with the leaves green, more or less mottled with white or gray. It is commonly cultivated in the Philippines but is nowhere spontaneous and is certainly not a native of the Archipelago.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 209*).

Justicia ecbolium Blanco Fl. Filip. (1837) 13; ed. 2 (1845) 10; ed. 3, 1 (1877) 18, *t. 7* (as *Graptophyllum hortense* Nees), non Linn.= **GRAPTOPHYLLUM PICTUM** (Linn.) Griff.

The plant that Blanco described under the name *Justicia ecbolium* is *Graptophyllum pictum,* the form with uniformly dull

purplish-brown leaves, not at all mottled. This form is much more abundant in the Philippines than is the one with the mottled leaves and is frequently planted in hedge rows. It is not a native of the Archipelago, but, judging from one of its native names, *ternate,* was probably introduced by the Spaniards from the Island of Ternate at the time when Ternate was controlled by the Spaniards.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 208*).

PSEUDERANTHEMUM Radlkofer

Justicia gendarussa Blanco Fl. Filip. (1837) 14; ed. 2 (1845) 10; ed. 3, 1 (1877) 19, *t. 9*, non Linn.=**PSEUDERANTHEMUM PULCHELLUM** (Hort.) Merr. in Philip. Journ. Sci. 7 (1912) Bot. 248 (*P. bicolor* Radlk., *Eranthemum bicolor* Schrank).

This species is common and widely distributed in the Philippines at low and medium altitudes generally growing in thickets. About Manila it is commonly known by the Spanish name *cinco llagas* (five wounds), in reference to the five, prominent, dull purple spots on the corolla lobes.

Illustrative specimen from Montalban, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 726*).

PERISTROPHE Nees

Justicia dalaora Blanco Fl. Filip. (1837) 14 (sp. nov.); ed. 2 (1845) 10; ed. 3, 1 (1877) 20=**PERISTROPHE BIVALVIS** (Linn.) Merr. Interpret. Herb. Amb. (1917) 476 (*P. tinctoria* Nees).

Fernandez-Villar reduced this to *Dianthera dichotoma* Clarke, to which Blanco's description does not apply. It is, however, an exact equivalent of *Peristrophe tinctoria* Nees, for which *P. bivalvis* (Linn.) Merr. is an older name. The plant is commonly known in the Visayan islands as *dalaora, deora,* etc., and is still used for dyeing as in Blanco's time.

DICLIPTERA Jussieu

Ruellia contorta Blanco Fl. Filip. (1837) 496 (sp. nov.); ed. 2 (1845) 347; ed. 3, 2 (1878) 278=**DICLIPTERA CONTORTA** (Blanco) comb. nov.

Blanco's species was retained by Fernandez-Villar as a distinct species, who transferred it to *Peristrophe* as *P. contorta* (Blanco) F.-Vill.; Nees in DC. Prodr. 11 (1867) 156 transferred it to *Hypoestes* as *H. contorta* (Blanco) Nees, but neither of these references is at all satisfactory. A careful search in Bauang, the type locality of Blanco's species, in February, the indicated month of flowering, has resulted in the discovery of but a single species that agrees at all with Blanco's description.

The only character in which Blanco's description does not agree with my interpretation of the species as *Dicliptera*, is in regard to the stamens. Blanco states that his species had four stamens, with four perfect anthers. I explain this discrepancy by the probability that Blanco interpreted the superposed anther-cells as individual anthers. The same species has been collected several times in the Philippines, the specimens being referred to *Dicliptera glabra* Dcne.; the material, however, does not well agree with Decaisne's description, and I am now inclined to consider it specifically distinct.

Illustrative specimen (a topotype) from Bauang, Batangas Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 802*).

HYPOESTES R. Brown

Justicia viridis Blanco Fl. Filip. (1837) 15; ed. 2 (1845) 11; ed. 3, 1 (1877) 21, non Forsk., nec Gill.=**HYPOESTES CINEREA** C. B. Clarke.

Blanco's conception of *Justicia viridis* was reduced by Fernandez-Villar to *Hypoestes laxiflora* Nees, a Philippine species, but one that does not grow in the region from which Blanco secured his specimens (Malinta, near Manila). In my previous consideration of Blanco's species it was reduced to *Hypoestes malaccensis* Wight, as *H. malaccanus* Wight, after specimens so identified by Lindau in Perkins Frag. Fl. Philip. (1904) 40. However, the specimens so named by Lindau are identical with *H. cinerea* C. B. Clarke. This is the only species of the genus that grows near Manila, and Blanco's description agrees with the specimens. Blanco's description typifies *Dicliptera viridis* Hassk. in Flora 47 (1864) 54.

Illustrative specimen from Masambong (near Manila), Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 722*).

RHINACANTHUS Nees

Justicia nasuta Linn.; Blanco Fl. Filip. (1837) 14; ed. 2 (1845) 10; ed. 3, 1 (1877) 19, *t. 10*=**RHINACANTHUS NASUTA** (Linn.) Kurz (*R. communis* Nees).

This is certainly an introduced plant in the Philippines; it is common in hedges in towns in the provinces near Manila.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1913 (*Merrill: Species Blancoanae No. 275*).

JUSTICIA Linnaeus

Dianthera subserrata Blanco Fl. Filip. (1837) 16 (sp. nov.); ed. 2 (1845) 11; ed. 3, 1 (1877) 22, *t. 80*=**JUSTICIA GENDARUSSA** Burm. f.

This species is common and widely distributed in the Philip-

pines, especially along small streams in forests; it also occurs in and about towns, but is apparently indigenous.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 263*).

Dianthera americana Blanco Fl. Filip. (1837) 16, non Linn.=**Dianthera ciliata** Blanco op. cit. ed. 2 (1845) 12, non Ruiz & Pav., nec aliorum=**JUSTICIA PROCUMBENS** Linn. (*Rostellularia procumbens* Nees).

Blanco's species was reduced by Fernandez-Villar to *Justicia mollissima* Nees, a species not known from the Philippines. The form he described is unmistakably referable to *Justicia* (*Rostellularia*) *procumbens* which is common and widely distributed in the Philippines. Blanco's description typifies *Rostellularia blancoi* Hassk. in Flora **47** (1864) 54.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 470*).

PLANTAGINACEAE

PLANTAGO Linnaeus

Plantago crenata Blanco Fl. Filip. (1837) 56 (sp. nov.)=**Plantago media** Blanco op. cit. ed. 2 (1845) 38; ed. 3, 1 (1877) 70, *t. 20*, non Linn.=**PLANTAGO MAJOR** Linn.

This was reduced by Fernandez-Villar to *Plantago erosa* Wall., which is a synonym of *Plantago major* Linn. The species was certainly introduced into the Philippines by the Spaniards, probably from Spain, and is now very generally known as *lantín*, a slight corruption of its Spanish name *llantén*. At low altitudes it is found only in cultivation, being locally used in the practice of medicine; at medium altitudes it is occasionally found growing spontaneously in and about towns.

Illustrative specimen from Nagcarlan, Laguna Province, Luzon, February, 1915 (*Merrill: Species Blancoanae No. 859*).

RUBIACEAE

DENTELLA Forster

DENTELLA REPENS Forst.; Blanco Fl. Filip. (1837) 146; ed. 2 (1845) 103; ed. 3, 1 (1877) 190.

This species was correctly interpreted by Blanco. It occurs throughout the Archipelago at low altitudes in the settled areas.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 265*).

OLDENLANDIA Plumier

Oldenlandia paniculata Linn.; Blanco Fl. Filip. (1837) 61; ed. 2 (1845) 4; ed. 3, 1 (1877) 82=**OLDENLANDIA BIFLORA** Linn.

This species is common and widely distributed throughout the

settled areas of the Philippines at low and medium altitudes. It occurs especially in gardens, and in waste places in and about towns, and is undoubtedly an introduced weed in the Archipelago. The Linnean specific name *biflora* has priority over the more commonly used *paniculata;* as to their identity, with critical notes on nomenclature, see Trimen. Fl. Ceylon **2** (1894) 317.

Illustrative specimen from Manila, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 189*).

Oldenlandia capensis Blanco Fl. Filip. (1837) 62; ed. 2 (1845) 45; ed. 3, 1 (1877) 83, non Linn. f.=**OLDENLANDIA DIFFUSA** (Willd.) Roxb.

This species is found in and about towns throughout the Philippines, at low altitudes, and is probably an introduced plant in the Archipelago. It grows in gardens, on damp walls, and in waste places, but is nowhere very abundant.

Illustrative specimen from San Antonio, Laguna Province, Luzon, October, 1915 (*Merrill: Species Blancoanae No. 985*).

Oldenlandia affinis Blanco Fl. Filip. ed. 2 (1845) 44; ed. 3, 1 (1877) 83, non DC.=**OLDENLANDIA CORYMBOSA** Linn.

Blanco's description is not good for *Oldenlandia corymbosa* Linn., yet better fits this species than any other form known from the Philippines. Fernandez-Villar was certainly in error in reducing it to *Oldenlandia nudicaulis* Roth [=*O. ovatifolia* (Cav.) DC.], for Blanco describes a very different plant. *Oldenlandia corymbosa* Linn. is common and widely distributed in the settled areas of the Philippines at low and medium altitudes.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 627*).

OPHIORRHIZA Linnaeus

OPHIORRHIZA OBLONGIFOLIA DC., Blanco Fl. Filip. ed. 2 (1845) 64 (*Ophiorhiza*); ed. 3, 1 (1877) 121.

Hydrocotyle monopetala Blanco Fl. Filip. (1837) 213 (sp. nov.)=**Ophiorrhiza triandra** Blanco op. cit. ed. 2 (1845) 65 (*Ophiorhiza*) (nom. nov.); ed. 3, 1 (1877) 122=? **OPHIORRHIZA OBLONGIFOLIA** DC.

The plant described is apparently the same as de Candolle's species, which was based on specimens originating in Sorsogon Province, Luzon. Fernandez-Villar reduced *Hydrocotyle monopetala* to *Epithema*, of the *Gesneriaceae*, as a valid species, *Epithema triandrum* (Blanco) F.-Vill., but nothing in Blanco's description applies to this genus or family. I have very little doubt that the form Blanco observed is nothing but *Ophiorrhiza oblongifolia* DC., with the flower, as to its stamens, erroneously

described. I know of no Philippine plant in any family that agrees wholly with Blanco's description and am forced to the conclusion that he correctly referred his *Hydrocotyle monopetala* to its proper genus, *Ophiorrhiza.* His specimens were from Malabrigo Point, Batangas Province, Luzon.

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, August 23, 1916, *comm. C. Mabesa* (*Merrill: Species Blancoanae No. 976*).

WENDLANDIA Bartling

Rondeletia asiatica Blanco Fl. Filip. (1837) 146, non Linn.=**Wendlandia exserta** Blanco op. cit. ed. 2 (1845) 104 (*exerta*); ed. 3, 1 (1877) 191, *t. 302*, non DC.=**WENDLANDIA LUZONIENSIS** DC.

This species is common and widely distributed in the Philippines at low and medium altitudes and, while the common form does not exactly match the type material of *Wendlandia luzoniensis* DC., it is probably only a form of de Candolle's species, which in turn may not prove to be specifically distinct from *W. paniculata* Roxb.

Illustrative specimen from Montalban, Rizal Province, Luzon, February, 1914 (*Merrill: Species Blancoanae No. 233*).

HYMENODICTYON Wallich

Exostemma philippicum Blanco Fl. Filip. ed. 2 (1845) 113; (sp. nov.); ed. 3, 1 (1877) 203, *t. 106*, non R. & S.=**HYMENODICTYON EXCELSUM (Roxb.) Wall.**

I have followed the Kew identification of Vidal's Luzon specimen in referring the Philippine material to Wallich's species. A critical revision of the genus, with abundant material, may show that the Philippine form is distinct, or perhaps referable to some other named species. It is widely distributed in the Philippines and presents an excellent illustration of the difficulties encountered in attempting to determine the identity of some of Blanco's species from native names cited by him. His original material was, in part, from Angat, Bulacan Province, Luzon, and he cites the Tagalog name *huliganga.* This name is still used in Angat for the same species, but, so far as our records show, is used in no other province. In other parts of Bulacan the name appears as *aligango;* in Rizal Province it is known as *hibao* and as *malatabaco* (the latter a manufactured name="false tobacco"); in the Ilocos provinces it is known as *abar;* in Nueva Ecija as *balangcori;* in Guimaras Island as *magtalisay;* and in Basilan Island as *camatolong.*

Illustrative specimen from Angat, Bulacan Province, Luzon,

August, 1913, under the Tagalog name *huliganga;* a topotype (*Merrill: Species Blancoanae No. 643*).

MITRAGYNA Korthals

Mamboga capitata Blanco Fl. Filip. (1837) 140 (gen. et sp. nov.) = **Nauclea luzoniensis** Blanco op. cit. ed. 2 (1845) 102; ed. 3, 1 (1877) 187, non D. Dietr. = **MITRAGYNA ROTUNDIFOLIA** (Roxb.) O. Ktze. (*M. diversifolia* Havil.).

Nauclea adina Blanco Fl. Filip. ed. 2 (1845) 102; ed. 3, 1 (1877) 188, *t. 131*, non Sm. = **MITRAGYNA ROTUNDIFOLIA** (Roxb.) O. Ktze.

The generic designation *Mamboga* Blanco has priority over *Mitragyna* Korthals, the latter having been published in the year 1839; however, Korthals's name is retained in the list of *nomina conservanda* adopted by the Vienna Botanical Congress. *Mamboga capitata* Blanco was reduced by Fernandez-Villar to *Stephegyne speciosa* Korth., and *Nauclea adina* Blanco to *S. diversifolia* Korth. While both species occur in the Philippines, I am now of the opinion that both of Blanco's descriptions apply to a single species, the common and widely distributed *Mitragyna rotundifolia* (Roxb.) O. Ktze. Blanco was certainly in error in describing the species as a large tree. The maximum size indicated on our abundant material is 15 meters, but most of the specimens are indicated as from trees from 6 to 12 meters high. The only difference indicated in Blanco's two descriptions is that the leaves of *Mamboga capitata* are described as smooth, while those of *Nauclea adina* are described as somewhat pubescent beneath; the species is decidedly variable in this character. Widely distributed in the northern and central Philippines at low altitudes and very generally known as *mambog*.

Illustrative specimen from Angat, Bulacan Province, Luzon, September, 1913 (*Merrill: Species Blancoanae No. 524*).

UNCARIA Schreber

Tapogomea rubra Blanco Fl. Filip. (1837) 145 (sp. nov.) = **Cephaelis expaleacea** Blanco op. cit. ed. 2 (1845) 103 (nom. nov.); ed. 3, 1 (1877) 189 = **? UNCARIA sp.**

Fernandez-Villar reduced this to *Uncaria acida* Roxb., a species not known from the Philippines and one to which Blanco's description does not conform. Blanco's description is sufficiently ample and certainly applies to some representative of the *Naucleae*, yet of all the numerous Philippine representatives of this tribe no single species conforms entirely with the description as given by Blanco. It is suspected, however, that the form described was a *Nauclea*, and that the description itself is faulty in some particulars. If an *Uncaria*, it should be near *U. perrottetii* Merr., *U. setiloba* Benth., and *U. philippinensis* Elm. The

name *mampol,* by which Blanco states it was known in Cebu, does not appear on any of our *Naucleae.* Serious objections to *Uncaria,* as the proper genus for this species, are Blanco's specific statement that the receptacle was not paleaceous, his description of it as a shrub, and his statements that the flowers are red, and that the style is of the same length as the stamens.

NEONAUCLEA Merrill

(*Nauclea* Auct., non Linnaeus)

Nauclea glandulosa Blanco Fl. Filip. (1837) 143 (sp. nov.) = **Nauclea glabra** Blanco op. cit. ed. 2 (1845) 101; ed. 3, 1 (1877) 185, non Roxb. = **NEONAUCLEA CALYCINA** (Bartl.) Merr. (*Nauclea calycina* Bartl.).

Nauclea lanceolata Blanco Fl. Filip. (1837) 144, non Blume = **Nauclea calycina** (?) Bartl.; Blanco op. cit. ed. 2 (1845) 101, ed. 3, 1 (1877) 186 = **NEONAUCLEA CALYCINA** (Bartl.) Merr.

After a careful consideration of Blanco's descriptions and our abundant Philippine material I am convinced that but a single species is represented by the two forms Blanco described, and that both are referable to *Neonauclea calycina* (Bartl.) Merr. a species based on Philippine specimens. The species is a timber tree and is still sometimes known as *bagarilat,* the Tagalog name cited by Blanco for *N. glandulosa* (*N. glabra*). Fernandez-Villar erroneously reduced *Nauclea glandulosa* (*N. glabra*) to *Anthocephalus codamba* Miq., but no representative of the genus *Anthocephalus* is known from the Philippines. Vidal referred *Nauclea glabra* Blanco to his *N. blancoi,* but the type of *N. blancoi* Vid. is manifestly *Cuming 890,* which represents a species entirely different from my interpretation of Blanco's species. *Nauclea lanceolata* Blanco was reduced by him, with doubt, to *N. calycina,* and by Fernandez-Villar to *N. purpurea* Roxb.; but Roxburgh's species does not extend to the Philippines. I can detect no specific differences either in Blanco's descriptions or in specimens that come in as *bagarilat* and as *bagarilao na itím* ("itím"=black).

Illustrative specimen from Mount Maquiling, Laguna Province, Luzon, September, 1914, *comm. A. Villamil,* there known as *bagarilao-na-itím* (*Merrill: Species Blancoanae No. 120*).

7 **Nauclea latifolia** Blanco Fl. Filip. (1837) 144 (sp. nov.), non Sm. = **Nauclea obtusa** Blanco op. cit. ed. 2 (1845) 101; ed. 3, 1 (1877) 187, non Blume = **NEONAUCLEA MEDIA** (Havil.) Merr. (*Nauclea media* Havil.).

Blanco described *Nauclea latifolia* as a new species, without reference to Smith's earlier use of the same name, and erroneously reduced it to Blume's *N. obtusa* in the second edition, in which he was followed by Fernandez-Villar; *Nauclea obtusa*

Blume does not extend to the Philippines. Blanco's description applies in all essentials to the species described by Haviland as *Nauclea media*=*Neonauclea media* (Havil.) Merr., which is widely distributed in the Philippines at low and medium altitudes. The time of flowering and native name agree with Blanco's data.

Illustrative specimen from Batangas Province, Luzon, August, 1914, there known as *balod* or *valod* (*Merrill: Species Blancoanae No. 542*).

NAUCLEA Linnaeus

(*Sarcocephalus* Afzelius)

Nauclea lutea Blanco Fl. Filip. (1837) 141 (sp. nov.) = **Nauclea glaberrima** Bartl.; Blanco op. cit. ed. 2 (1845) 100; ed. 3, 1 (1877) 184, *t. 15* = NAUCLEA ORIENTALIS Linn. (*Sarcocephalus cordatus* Miq., *S. glaberrimus* Miq., *S. orientalis* Merr.).

The species Blanco described as *Nauclea lutea* in the first edition of his Flora de Filipinas he reduced to *Nauclea glaberrima* Bartl., in the second edition, but if a distinct species is represented, then Blanco's name has priority. Haviland has retained *Sarcocephalus glaberrimus* (Bartl.) Miq., as a species distinct from *S. cordatus* Miq.=*Nauclea orientalis* Linn. It is evident, from the examination of the literature bearing on the subject that *Nauclea* must be retained for those species now referred to *Sarcocephalus*, while those species now classified as *Nauclea* must be called *Neonauclea*.* It is common and widely distributed in the Philippines at low and medium altitudes, the wood yellow; generally known in the Archipelago as *bancál*.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 408*).

MUSSAENDA Linnaeus

Mussaenda frondosa Blanco Fl. Filip. (1837) 167 (*fondosa*); ed. 2 (1845) 118; ed. 3, 1 (1877) 211, *t. 58*, non Linn. = **MUSSAENDA PHILIPPICA** Rich. (*M. grandiflora* Rolfe, non Benth.).

This species is common and widely distributed in the Philippines at low altitudes; perhaps identical with *Mussaenda glabra* Vahl.

Illustrative specimen from Camarines Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 413*).

RANDIA Houstoun

Stigmanthus cymosus Blanco Fl. Filip. ed. 2 (1845) 117; ed. 3, 1 (1877) 209, non Lour. = **RANDIA** sp.?

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* See Merrill, E. D., On the application of the generic name Nauclea of Linnaeus, *Journ. Wash. Acad. Sci.* 5 (1915) 530–542.

Blanco's description is altogether too short and imperfect from which to interpret this species, and the plant he described is certainly not the same as *Stigmanthus cymosus* Lour. Fernandez-Villar referred it to *Webera* (*Tarenna*) *odorata* Roxb., where it certainly does not belong. The only reason for considering it even a rubiaceous plant is the fact that Blanco placed it with other genera of this family. If a rubiaceous plant, it is probably a *Randia*, but even this is a mere guess. Blanco's specimens were from Calauan, Laguna Province, Luzon.

GARDENIA Linnaeus

Sulipa pseudopsidium Blanco Fl. Filip. (1837) 497 (gen. et sp. nov.); ed. 2 (1845) 347; ed. 3, 2 (1878) 280=**GARDENIA PSEUDOPSIDIUM** (Blanco) F.-Vill.

There is no doubt as to the correctness of referring *Sulipa pseudopsidium* Blanco to *Gardenia* in spite of a few discrepancies in Blanco's description which were apparently due to faulty observations. I am now of the opinion that *Gardenia barnesii* Merr. is probably not specifically distinct from *Gardenia pseudopsidium* F.-Vill. The only differences appear to be in the length and size of the corolla, but an examination of a large series of specimens shows the corolla to be exceedingly variable.

Illustrative specimen from Antipolo, Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 655*).

Randia aculeata Blanco Fl. Filip. (1837) 141; ed. 2 (1845) 99; ed. 3, 1 (1877) 183, non Linn.=**GARDENIA CURRANII** Merr.

Blanco's species was reduced by Fernandez-Villar to *Randia dumetorum* Lam., which is certainly an error, Lamarck's species not being a native of the Philippines. *Gardenia curranii* Merr. is known from Bataan, Rizal, and Batangas Provinces, Luzon, and may prove to be referable to the genus *Randia* rather than to *Gardenia*.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914, there known as *sinampaga* (*Merrill: Species Blancoanae No. 76*).

VILLARIA Rolfe

Remijia odorata Blanco Fl. Filip. ed. 2 (1845) 115 (*olorata*) (sp. nov.); ed. 3, 1 (1877) 205, *t. 56*=**VILLARIA ODORATA** (Blanco) comb. nov. (*Villaria littoralis* Vid.).

Fernandez-Villar reduced this to *Randia densiflora* Benth., a species with which Blanco's description does not conform. Blanco's description applies unmistakably to *Villaria*, and to *V. littoralis* Vid. rather than to *V. philippinensis* Rolfe, although the

two species are closely allied. I have no hesitation in adopting Blanco's specific name in place of Vidal's. His material was from Bauang, Batangas Province, Luzon; the nearest locality from which I have seen specimens of the species is the adjoining province, Laguna.

SCYPHIPHORA Gaertner

Ixora manila Blanco Fl. Filip. (1837) 60 (sp. nov.); ed. 2 (1845) 42; ed. 3, 1 (1877) 77, *t. 277*=**SCYPHIPHORA HYDROPHYLLACEA** Gaertn.

This species is widely distributed in the Philippines along the seashore, the City of Manila probably taking its name from the Tagalog word *nilad* or *nilar* credited by Blanco to this species; hence Blanco's specific name *manila*, literally the place where *nilar* grows.

Illustrative specimen from Culion, August, 1913 (*Merrill: Species Blancoanae No. 635*).

HYPOBATHRUM Blume

Serissa myrtifolia Blanco Fl. Filip. (1837) 164 (sp. nov.)=**Remijia angatensis** Blanco op. cit. ed. 2 (1845) 115 (nom. nov.); ed. 3. 1 (1877) 206=**HYPOBATHRUM GLOMERATUM** (Bartl.) K. Sch. in Engl. & Prantl Nat. Pflanzenfam. 4[4] (1891) 156 [*Platymerium glomeratum* Bartl. in DC. Prodr. 4 (1830) 619; *Randia angatensis* F.-Vill. Nov. App. (1880) 108].

Serissa pinnata Blanco Fl. Filip. (1837) 163 (sp. nov.)=**Remijia obscura** Blanco op. cit. ed. 2 (1845) 116 (*oscura*) (nom. nov.); ed. 3, 1 (1877) 207=**HYPOBATHRUM GLOMERATUM** (Bartl.) K. Sch. [*Gardenia obscura* Vid. Phan. Cuming. Philip. (1885) 18, 119; *Randia obscura* F.-Vill. Nov. App. (1880) 108; *Gardenia pinnata* Merr. in Govt. Lab. Publ. (Philip.) 27 (1905) 53].

There is manifestly but a single species represented by the two described by Blanco, for which he published four names. The species is dioecious or polygamo-dioecious, the staminate flowers many, fascicled, short-pedicelled, and the pistillate or perfect flowers few, long-pedicelled. It is commonly known to the Tagalogs as *caragli* or *calagri* and is abundant in towns in Bulacan Province, occurring also in Manila.

Illustrative specimens from Angat, Bulacan Province, Luzon, July, 1914 (*Merrill: Species Blancoanae Nos. 223, 688*).

PLECTRONIA Linnaeus

Canthium monoflorum Blanco Fl. Filip. (1837) 166 (sp. nov.)=**Canthium pedunculare** Cav.; Blanco op. cit. ed. 2 (1845) 116; ed. 3, 1 (1877) 208=**PLECTRONIA PEDUNCULARIS** (Cav.) Elm. [*Canthium lycioides A.* Rich. (1830); *Plectronia lycioides* Elm. (1906)].

This species is common in thickets at low altitudes in the provinces about Manila and also occurs in Palawan. Blanco

was correct in reducing his *Canthium monoflorum* (1837) to *Canthium pedunculare* Cav. (1799). The types of both *Canthium pedunculare* Cav. and *C. lycioides* A. Rich. were of Philippine origin.

Illustrative specimens from Manila, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 32*); Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 380*).

Canthium pauciflorum Blanco Fl. Filip. (1837) 165 (sp. nov.) = **Canthium horridum** Blume; Blanco op. cit. ed. 2 (1845) 116, ed. 3, 1 (1877) 208, *t.* 57 = **PLECTRONIA HORRIDA** (Blume) Benth. & Hook. f.

Blanco was apparently correct in reducing his *Canthium pauciflorum* to *Canthium horridum* Blume. The species is of rather local occurrence in the Philippines at low altitudes in the settled areas. *Canthium hebecladum* DC. (1830), based on Philippine material, is identical with *C. pauciflorum* Blanco = *Plectronia horrida* (Blume) Benth. & Hook. f., Blume's specific name dating from the year 1826.

Illustrative specimen from Pasig, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 143*).

Ronabea bipinnata Blanco Fl. Filip. (1837) 162 (sp. nov.) = **Ronabea arborea** Blanco op. cit. ed. 2 (1845) 114 (nom. nov.); ed. 3, 1 (1877) 204 = **PLECTRONIA MONSTROSA** A. Rich. (1830) (*Canthium mite* Bartl., 1830; *Canthium arboreum* Vid., 1885; *Canthium bipinnatum* Merr., 1905; *Plectronia mitis* Elm., 1906).

This species is common and widely distributed in Luzon. For a discussion of the synonymy see Merrill in Philip. Journ. Sci. 8 (1913) Bot. 48.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 248*).

Ixora glandulosa Blanco Fl. Filip. (1837) 61 (sp. nov.); ed. 2 (1845) 42; ed. 3, 1 (1877) 78 = **PLECTRONIA GLANDULOSA** (Blanco) comb. nov. [*Plectronia viridis* Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 131].

Polyozus bipinnatus Blanco Fl. Filip. ed. 2 (1845) 43 (sp. nov.); ed. 3, 1 (1877) 79 = **PLECTRONIA GLANDULOSA** (Blanco) Merr.

Ixora glandulosa was erroneously reduced by Fernandez-Villar to *Canthium confertum* Korth., a species unknown from the Philippines. It is certainly identical with the form described by me in 1906 as *Plectronia viridis*, but Blanco's specific name being the older is here accepted. The species is of wide distribution in the forests of the Philippines at medium altitudes. Fernandez-Villar reduced *Polyozus bipinnatus* to *Arthrophyllum pinnatum* Maingay of the *Araliaceae*, a species that does not extend to the Philippines, and one to which Blanco's description does not at all conform. With the exception of the description of

the leaves as compound, all data given by Blanco apply word for word to *Plectronia glandulosa* (Blanco) Merr., which Blanco otherwise described as *Ixora glandulosa*. The young branchlets with their characteristic distichous leaves were erroneously interpreted by Blanco as compound leaves.

Illustrative specimen from Mount Mariveles, Bataan Province, Luzon, March, 1915 (*Merrill: Species Blancoanae No. 897*).

GUETTARDA Linnaeus

Guettarda vermicularis Blanco Fl. Filip. (1837) 723 (sp. nov.); ed. 2 (1845) 500; ed. 3, 3 (1879) 125=**GUETTARDA SPECIOSA** Linn.

Blanco's description applies unmistakably to this species, which is widely distributed along the seashore throughout the Philippines; his specimens were from the seashore at Bauang, Batangas Province, Luzon. Fernandez-Villar was entirely wrong in reducing it to *Anneslea fragrans* Wall. of the *Theaceae*, as no representative of this genus is known from the Philippines, and moreover Blanco's description does not in the least apply to Wallich's species.

Illustrative specimen from Pasuquin, Ilocos Norte Province, November, 1916 (*Merrill: Species Blancoanae No. 1045*).

COFFEA Linnaeus

COFFEA ARABICA Linn.; Blanco Fl. Filip. (1837) 156; ed. 2 (1845) 110; ed. 3, 1 (1877) 198, *t. 53*.

The Linnean species was correctly interpreted by Blanco. Coffee was introduced by the Spaniards and is now found throughout the Archipelago in cultivation. It was formerly cultivated on a large scale in some provinces, but the industry was largely destroyed by the introduction of the coffee blight, *Hemileia vastatrix*, about 1890.

Illustrative specimen from Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 590*).

PAVETTA Linnaeus

PAVETTA MEMBRANACEA Blanco Fl. Filip. (1837) 59 (sp. nov.)= **Pavetta sambucina** Blanco op. cit. ed. 2 (1845) 41; ed. 3, 1 (1877) 75, *t. 246*, non DC.

The species Blanco described as a new species in the first edition of his Flora de Filipinas he erroneously reduced in the second edition to *Pavetta sambucina* DC., a species that does not occur in the Philippines. Likewise Fernandez-Villar erroneously reduced it to *Pavetta angustifolia* R. & S., a species that also does not extend to the Philippines. Blanco's *Pavetta membranacea* is a valid species, and his name is the oldest one and

should be retained. An exact synonym is *Pavetta manillensis* Walp. (1843). The species is of local occurrence at low and medium altitudes in central and northern Luzon.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 493*).

IXORA Linnaeus

IXORA COCCINEA Linn.; Blanco Fl. Filip. (1837) 59; ed. 2 (1845) 41; ed. 3, 1 (1877) 76, *t. 21.*

Blanco seems to have correctly interpreted the Linnean species, which occurs in the Philippines only as an introduced and cultivated plant. From its native name *santán* (corruption of Santa Ana) it is probable that it was introduced after the arrival of the Spaniards. This red-flowered form is commonly designated as *santán pulá,* i. e., red santan, in distinction from the white-flowered species *I. finlaysoniana* Wall. which is called *santán putí,* i. e., white santan.

Illustrative specimen from Manila, Luzon, July, 1914 (*Merrill: Species Blancoanae No. 133*).

Taligalea umbellata Blanco Fl. Filip. ed. 2 (1845) 337 (sp. nov.); ed. 3, 2 (1878) 66=**IXORA CUMINGIANA** Vid.

This species is common and widely distributed in the northern and central Philippines, occurring in thickets and in forests at low and medium altitudes. Blanco's specific name is invalidated in *Ixora* by *I. umbellata* Valeton. By Fernandez-Villar it was reduced to *Ixora macrophylla* Bartl., but Blanco's description does not apply to Bartling's species while, moreover, *I. macrophylla* Bartl. was described by Blanco as *Ixora arborea.*

Illustrative specimen from Rizal Province, Luzon, November, 1915 (*Merrill: Species Blancoanae No. 954*).

Ixora arborea Blanco Fl. Filip. (1837) 61 (sp. nov.); ed. 2 (1845) 42; ed. 3, 1 (1877) 78, non Roxb.=**IXORA MACROPHYLLA** Bartl.

Blanco's species was reduced by Fernandez-Villar to *Ixora stricta* Roxb., but although the description is short and imperfect it manifestly does not agree with Roxburgh's species. So far as the description goes it is in entire agreement with *Ixora macrophylla* Bartl., a species based on Philippine material and one of wide distribution in the forests of the Archipelago at low and medium altitudes.

Illustrative specimen from Batangas Province, Luzon, July, 1914 (leaves narrower than in the type) (*Merrill: Species Blancoanae No. 734*).

Pavetta filiformis Llanos Frag. Pl. Filip. (1851) 48 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 35=**IXORA** sp.

A species of wholly doubtful status, reduced by Fernandez-Villar to *Ixora pendula* Jack, a species that does not extend to the Philippines. The description is very indefinite, and if really an *Ixora*, the species might be either of the very distinct *I. philippinensis* Merr., *I. cumingiana* Vid., or *I. macrophylla* Bartl. There is one objection to *Ixora* as the proper genus for Llanos's species, in that he describes the plant as scandent, this applying to no Philippine species of *Ixora*. Mr. C. de Candolle informs me that the species is not represented among the Llanos specimens in the de Candolle herbarium.

GRUMILEA Gaertner

Paederia tacpo Blanco Fl. Filip. (1837) 160 (sp. nov.); ed. 2 (1845) 113; ed. 3, 1 (1877) 202, *t.* 55=**GRUMILEA LUÇONIENSIS** (C. & S.) Merr. (*Psychotria luzoniensis* F.-Vill. *Coffea luçoniensis* Cham. and Schlecht. *Psychotria tacpo* Rolfe, *P. malayana* F.-Vill., non Jack).

This species is very common and widely distributed at low altitudes in the Philippines and is especially abundant in the provinces contiguous to Manila from which Blanco received most of his material.

Illustrative specimens from Antipolo, Rizal Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 597*); Manila, Luzon, December, 1914, here known as *tacpo* (*Merrill: Species Blancoanae No. 560*).

PAEDERIA Linnaeus

Paederia foetida Blanco Fl. Filip. (1837) 159; ed. 2 (1845) 112; ed. 3, 1 (1877) 201, *t.* 54, non ? Linn.=**PAEDERIA TOMENTOSA** Blume.

This species is common and widely distributed at low altitudes in the Philippines. It is a characteristic species of the settled areas. It is very closely allied to *Paederia foetida* Linn., and Blume's species is perhaps not specifically distinct. When fresh, the crushed plant is decidedly foetid.

Illustrative specimen from Pasig, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 750*).

MORINDA Linnaeus

Morinda litoralis Blanco Fl. Filip. ed. 2 (1845) 109 (sp. nov.); ed. 3, 1 (1877) 197, *t.* 52=**MORINDA CITRIFOLIA** Linn.

This species is common and widely distributed in the Philippines, but much less abundant than is *Morinda bracteata* Roxb. It is commonly known as *bancudo*.

Illustrative specimen from the bank of a tidal stream, Mari-

caban, Rizal Province, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 444*).

Morinda citrifolia Blanco Fl. Filip. (1837) 149, non Linn.=**Morinda ligulata** Blanco op. cit. ed. 2 (1845) 105 (sp. nov.); ed. 3, 1 (1877) 196=**MORINDA BRACTEATA** Roxb.

Morinda royoc Blanco Fl. Filip. (1837) 148; ed. 2 (1845) 105; ed. 3, 1 (1877) 193, non Linn.=**MORINDA BRACTEATA** Roxb.

I believe the form that Blanco described as *Morinda royoc* to be nothing more than the common *Morinda bracteata* Roxb. (*M. ligulata* Blanco), erroneously described as subscandent. The description consists only of the statement that it reclines over neighboring trees, that the leaves are opposite, ovate, oblong, keeled, the petioles short, the flowers and fruit as in *culit*, i. e., *Morinda ligulata* Blanco=*M. bracteata* Roxb. It was said to be common in Malinta, near Manila, slightly known to the natives, but there called *tumbong asong hapay*, *tumbong aso* being a common name for both *Morinda citrifolia* Linn. and *M. bracteata* Roxb. The data regarding its medicinal use were apparently copied from works of other authors. Fernandez-Villar reduced it to *Morinda tinctoria* Roxb., where it certainly does not belong. *Morinda bracteata* Roxb. is very common and widely distributed in the Philippines, by some authors considered a synonym of *Morinda citrifolia* Linn., by others a variety (*bracteata*) of that species.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 280*).

Coffea volubilis Blanco Fl. Filip. (1837) 157 (sp. nov.); ed. 2 (1845) 111; ed. 3, 1 (1877) 200=**MORINDA VOLUBILIS** (Blanco) Merr. in Philip. Journ. Sci. 1 (1906) Suppl. 137, cum descr.

Fernandez-Villar reduced Blanco's species to *Morinda tinctoria* Roxb., where it certainly does not belong. I have connected certain Luzon material with Blanco's species and have redescribed it as *Morinda volubilis* (Blanco) Merr. I feel fairly confident that this interpretation of *Coffea volubilis* Blanco is correct.

Morinda umbellata Blanco Fl. Filip. ed. 2 (1845) 110; ed. 3, 1 (1877) 197, non ? Linn.=**MORINDA MICROCEPHALA** Bartl.

This reduction follows Fernandez-Villar's disposition of the form that Blanco described. It is not certain, however, that the Philippine *Morinda microcephala* Bartl. is specifically distinct from the widely distributed *Morinda umbellata* Linn.

BORRERIA G. F. W. Meyer

Spermacoce mutilata Blanco Fl. Filip. ed. 2 (1845) 43 (sp. nov.); ed. 3, 1 (1877) 80 (*mutilada*)=**BORRERIA HISPIDA** (Linn.) K. Sch. (*Spermacoce hispida* Linn.).

Spermacoce muriculata Blanco op. cit. ed. 2 (1845) 44; 81, non DC.= **BORRERIA HISPIDA** (Linn.) K. Sch.

Borreria hispida (Linn.) K. Sch. is common and widely distributed in the settled areas in the Philippines at low altitudes, perhaps introduced. I can see no reason for distinguishing the two forms indicated by Blanco, although Fernandez-Villar reduced *Spermacoce muriculata* Blanco (non DC.) to *S. scaberrima Blume.*

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 430*).

CAPRIFOLIACEAE

SAMBUCUS Linnaeus

SAMBUCUS JAVANICA Blume; Blanco Fl. Filip. ed. 2 (1845) 151; ed. 3, 1 (1877) 271.

Blanco correctly interpreted Blume's species which is widely distributed in the Philippines in forests and in ravines, extending from low altitudes to at least 2,000 meters.

Illustrative specimen from Baguio, Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 13*).

CUCURBITACEAE

MELOTHRIA Linnaeus

Cucumis luzonicus Blanco Fl. Filip. (1837) 861 (sp. nov.); ed. 2 (1845) 534; ed. 3, 3 (1879) 180, *t. 365*=**MELOTHRIA INDICA** Lour.

This species is widely distributed in the Philippines at low altitudes, but is nowhere abundant. It grows in open grassy places. As noted by Blanco the fruit (and the whole plant for that matter) has the odor and taste of the *pepino* or cucumber (*Cucumis sativus* L.).

Illustrative specimen from between Guadalupe and Pasig (a topotype of *Cucumis luzonicus*), Rizal Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 848*).

MOMORDICA Linneaus

Momordica balsamina Blanco Fl. Filip. (1837) 768; ed. 2 (1845) 529; ed. 3, 3 (1879) 172, non Linn.=**MOMORDICA CHARANTIA** Linn.

Momordica cylindrica Blanco op. cit. 769 (*cilindrica*); 530; 172, *t. 357*, non Linn.=**MOMORDICA CHARANTIA** Linn.

There is no reason for considering that Blanco described more than one species under his conception of *Momordica balsamina* and *M. cylindrica.* The latter, as described by Blanco, is the cultivated form, with larger fruits than the wild or semi-wild form described by him as *M. balsamina.* Blanco's *Momordica balsamina* was considered by Fernandez-Villar to represent the

Linnean species, but this appears not to be the case, as *M. balsamina* Linn. apparently does not occur in the Philippines. Throughout the Philippines at low and medium altitudes in the settled areas.

Illustrative specimen from Balayan, Batangas Province, Luzon, August, 1914 (*Merrill: Species Blancoanae No. 481*).

Momordica sphaeroidea Blanco Fl. Filip. (1837) 771 (sp. nov.); ed. 2 (1845) 531; ed. 3, 3 (1879) 174, *t. 380*=**MOMORDICA COCHINCHINENSIS** Spreng., forma.

Blanco's species has been reduced to *Momordica cochinchinensis* Spreng., which is undoubtedly correct. The form distributed herewith is exactly *Momordica ovata* Cogn., a species based on Philippine material, differing from Sprengl's species in having entire, not lobed leaves. Blanco's description of the leaves is "con tres ángulos," thus approaching the *M. cochinchinensis* type. However, all intergrades can be found presenting entire or merely toothed leaves, obscurely 3-angled leaves, to prominently 3-angled and even deeply 3-lobed ones; entire and prominently angled leaves frequently occur not only on the same specimen but on the same branch. Our abundant collections show conclusively that *Momordica ovata* Cogn. is merely a form or variety of *M. cochinchinensis* Spreng. The species is widely distributed in the Philippines at low altitudes.

Illustrative specimen from Batulao, Batangas Province, Luzon, February, 1915, there known as *boyoc-boyoc* (*Merrill: Species Blancoanae No. 818*).

Passiflora saponaria Blanco Fl. Filip. (1837) 650 (sp. nov.)=**Modecca ? saponaria** Blanco op. cit. ed. 2 (1845) 453 (comb. nov.); ed. 3, 3 (1879) 53=**MOMORDICA COCHINCHINENSIS** Spreng., forma.

Blanco's description is very inadequate, and as he never saw flowers, he was uncertain as to the generic position of his species. His material was from Tagudin, Ilocos Sur Province, Luzon, known to the Ilocanos as *libas*, the fruit edible. We have three collections from Ilocos Norte and from Pangasinan, all bearing the Ilocano name *libas*, and this material otherwise agrees with Blanco's description. The species was erroneously reduced by Fernandez-Villar to *Modecca trilobata* Roxb. It differs from the commoner forms of *Momordica cochinchinensis* Spreng. in its leaves being more deeply and more narrowly lobed, but the difference does not appear to be essential.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, May, 1914, the fruit indicated as edible, and with the Ilocano name *libas* (*Merrill: Species Blancoanae No. 86*).

LUFFA Linnaeus

Momordica operculata Blanco Fl. Filip. (1837) 770; ed. 2 (1845) 530; ed. 3, 3 (1879) 173, *t. 334* (as *Luffa petola* Sering., the cultivated form) non Linn.=**LUFFA CYLINDRICA** (Linn.) Roem.

This species is common and widely distributed in the Philippines at low and medium altitudes in the settled areas, both wild and cultivated. The wild form is the one described by Blanco, and this has somewhat smaller leaves and smaller fruits than the cultivated form.

Illustrative specimens (wild form) from Pasay, Rizal Province, Luzon, October, 1914 and Angat, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae Nos. 222, 660*).

Cucumis acutangulus Linn.; Blanco Fl. Filip. (1837) 776; ed. 2 (1845) 534; ed. 3, 3 (1879) 179, *t. 288*=**LUFFA ACUTANGULA** (Linn.) Roxb.

This species occurs in the Philippines only in cultivation and, unlike the commoner *Luffa cylindrica*, has not become established. In aspect, as to vegetative and floral characters, it greatly resembles *Luffa cylindrica*, but the male flowers have three instead of five stamens. The fruits of the two species are very different, those of *L. cylindrica* being cylindric and nearly smooth, those of *L. acutangula* having 10, longitudinal, prominent ridges, making the fruit distinctly 10-angled.

Illustrative specimen from Antipolo, Rizal Province, Luzon, November, 1914 (*Merrill: Species Blancoanae No. 107*).

CUCUMIS Linnaeus

CUCUMIS MELO Linn.; Blanco Fl. Filip. (1837) 775; ed. 2 (1845) 534; ed. 3, 3 (1879) 179.

Blanco certainly described the form of this species that is placed by Cogniaux under *Cucumis melo* var. *agrestis* Naud. Fernandez-Villar reduced *Cucumis melo* Blanco to *C. trigonus* Roxb., a species that does not occur in the Philippines and one to which Blanco's description does not apply. The species occurs in the Philippines in the settled areas as an occasional plant in waste places and in fallow lands, undoubtedly an introduced naturalized form. Several forms are also cultivated.

Illustrative specimen from Umingan, Pangasinan Province, Luzon, April, 1914, there known as *it-timon* (*Merrill: Species Blancoanae No. 728*).

BENINCASA Savi

Cucurbita pepo-aspera Blanco Fl. Filip. (1837) 773 (sp. nov.); ed. 2 (1845) 532; ed. 3, 3 (1879) 176, *t. 323*=**BENINCASA HISPIDA** (Thunb.) Cogn. (*B. cerifera* Savi).

The reduction of Blanco's species to *Benincasa cerifera* Savi was made by Fernandez-Villar, which is manifestly the correct

disposition of it. The wax gourd is widely cultivated in the Philippines and is universally known as *condol*, the native name cited by Blanco.

LAGENARIA Seringe

Cucurbita lagenaria-oblonga Blanco Fl. Filip. (1837) 772 (var. nov.); ed. 2 (1845) 531; ed. 3, 3 (1879) 175=**LAGENARIA LEUCANTHA** (Lam.) Rusby (*L. vulgaris* Seringe).

Cucurbita lagenaria-villosa Blanco op. cit. 772 (var. nov.); 532; 175=**LAGENARIA LEUCANTHA** (Lam.) Rusby.

Lagenaria leucantha (Lam.) Rusby (*L. vulgaris* Seringe) is commonly cultivated in the Philippines, but does not occur wild. It is probably of prehistoric introduction. The two forms described by Blanco are manifestly the same species, which presents great variation in fruit characters. It is commonly known as *opo* or *upo*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 600*).

TRICHOSANTHES Linnaeus

Trichosanthes amara Blanco Fl. Filip. (1837) 774; ed. 2 (1845) 533; ed. 3, 3 (1879) 178, non Linn.=(pro parte) **TRICHOSANTHES CUCUMERINA** Linn.

Blanco certainly included representatives of two genera in his description of *Trichosanthes amara;* one, flowering specimen, a *Trichosanthes;* and the other, fruit, certainly *Luffa acutangula* Roxb., var. The species was reduced by Fernandez-Villar to *Trichosanthes palmata* Roxb., a species not known from the Philippines; by Cogniaux to *Luffa acutangula* Roxb. var. *amara* C. B. Clarke, which is possibly correct as to the fruit described by Blanco; and by myself as certainly identical with *Trichosanthes quinquangulata* A. Gray. As to the flowers Blanco's description of the corolla with "las cinco partes del limbo, laceradas" is unmistakably *Trichosanthes;* as to the fruits "con cobertera en el extremo, angulosa y larga" unmistakably a *Luffa*. On the whole I now consider that the *Trichosanthes* part of the description agrees better with *T. cucumerina* Linn. as locally interpreted, than with *T. quinquangulata* A. Gray; Blanco would certainly have mentioned the very large and prominent bracts of the latter species. *Trichosanthes cucumerina* is common in the vicinity of Manila, and is widely distributed in the Philippines at low altitudes, growing in thickets in the settled areas.

CUCURBITA Linnaeus

Cucurbita sulcata Blanco Fl. Filip. (1837) 773 (sp. nov.); ed. 2 (1845) 532; ed. 3. 3 (1879) 177, *t. 320*=**CUCURBITA MAXIMA** Duchesne.

The common squash is cultivated throughout the Philippines

and is universally known in the Archipelago as *calabaza*, a name of Spanish origin. The plant was undoubtedly introduced into the Philippines from Mexico, and at a very early date in the Spanish occupation.

Illustrative specimen from Maragondong, Cavite Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 152*).

CAMPANULACEAE

SPHENOCLEA Linnaeus

Pongatium spongiosum Blanco Fl. Filip. (1837) 86 (sp. nov.)=**SPHENOCLEA ZEYLANICA** Gaertn.; Blanco op. cit. ed. 2 (1845) 62; ed. 3, 1 (1877) 117, *t. 143*.

Reichelia palustris Blanco Fl. Filip. (1837) 220 (sp. nov.); ed. 2 (1845) 155; ed. 3, 1 (1877) 277=**SPHENOCLEA ZEYLANICA** Gaertn.

The form that Blanco described as a new species, *Pongatium spongiosum*, in the first edition of his Flora de Filipinas he correctly reduced in the second edition to *Sphenoclea zeylanica* Gaertn. There is not the slightest doubt as to the correctness of the reduction of Blanco's *Reichelia palustris* to the same species. This is a widely distributed weed in the Philippines at low and medium altitudes in the settled areas, in low, open, wet places.

Illustrative specimen from Manila, Luzon, September, 1914 (*Merrill: Species Blancoanae No. 30*).

GOODENIACEAE

SCAEVOLA Linnaeus

Scaevola lobelia Blanco Fl. Filip. (1837) 147; ed. 2 (1845) 104; ed. 3, 1 (1877) 193, *t. 210*, non Murr.=**SCAEVOLA FRUTESCENS** (Mill.) **Krause (*S. koenigii* Vahl).**

This characteristic species occurs along the seashore throughout the Philippines. According to the idea of generic types, as interpreted by some American botanists, *Scaevola* becomes *Lobelia*, and *Lobelia* must receive a new name; see W. F. Wight in Contr. U. S. Nat. Herb. 9 (1905) 310. I do not accept Wight's interpretation.

Illustrative specimens from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 526*); Baler, Tayabas Province, Luzon, June, 1913 (*Merrill: Species Blancoanae No. 59*).

CALOGYNE R. Brown

Balingayum decumbens Blanco Fl. Filip. (1837) 187 (gen. et sp. nov.); ed. 2 (1845) 132; ed. 3, 1 (1877) 237=**CALOGYNE PILOSA** R. Br.

This monotypic genus proposed by Blanco was retained as

a distinct genus of the *Onagraceae* by Fernandez-Villar, but by Bentham and Hooker and by Engler and Prantl it was referred with doubt to the genus *Erythropalum* of the *Olacaceae*. It is not uncommon in fallow rice lands about Manila.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 548*).

COMPOSITAE

VERNONIA Schreber

Eupatorium luzoniense Llanos Frag. Pl. Filip. (1851) 88 (sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 68, *t. 280* (as *Vernonia parviflora* Reinw.) =**VERNONIA CINEREA** (Linn.) Less.

To *Eupatorium luzoniense* Llanos referred, with doubt, *Eupatorium ayapana* Vent., as described by Blanco, but this is a manifest error. *Eupatorium ayapana* Vent.=*E. triplinerve* Vahl was correctly interpreted by Blanco; it occurs in the Philippines only as a very rarely cultivated plant and is thoroughly well known to the few who cultivate it. Llanos states, regarding his *Eupatorium luzoniense:* "No es conocido, y es frecuente a orilla de los caminos y huertos de los naturales. El estigma parece de las vernonias." *Vernonia cinerea* Less. is very common along streets and paths and as a weed in gardens, growing at low and medium altitudes in the settled areas throughout the Philippines; moreover Llanos's description certainly applies to Lessing's species.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 697*).

Serratula multiflora Blanco Fl. Filip. (1837) 617; ed. 2 (1845) 431; ed. 3, 3 (1879) 7, non Linn.=**VERNONIA PATULA** (Ait.) Merr. (*V. chinensis* Less.; *V. villosa* W. F. Wight).

This species is common and widely distributed in the settled areas of the Philippines at low altitudes, certainly introduced.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 235*).

ELEPHANTOPUS Linnaeus

ELEPHANTOPUS SCABER Linn.; Blanco Fl. Filip. (1837) 634; ed. 2 (1845) 441; ed. 3, 3 (1879) 27.

The Linnean species was correctly interpreted by Blanco. A common weed in the settled areas at low altitudes, throughout the Philippines. Introduced.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1913 (*Merrill: Species Blancoanae No. 442*).

Elephantopus serratus Blanco Fl. Filip. (1837) 635 (sp. nov.); ed. 2 (1845) 442; ed. 3, 3 (1879) 28=**ELEPHANTOPUS MOLLIS** HBK.

This Mexican weed was apparently an early introduction into the Philippines through the medium of the Acapulco-Manila galleons; it is now very common and widely distributed, occurring in waste places and in open grasslands from sea level to an altitude of at least 1,800 meters. Blanco's description is very short and imperfect, but so far as it goes it applies to this species and to no other Philippine form known to me.

Illustrative specimen from Antipolo, Rizal Province, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 323*).

Ageratum quadriflorum Blanco Fl. Filip. (1837) 624 (sp. nov.)=**Elephantopus ? dubius** Blanco op. cit. ed. 2 (1845) 442 (nom. nov.); ed. 3, 3 (1879) 28=**ELEPHANTOPUS SPICATUS** Aubl.

This is one of the most widely distributed weeds in the Philippines. It was introduced from Mexico into Guam, in the Marianne Islands, and into the Philippines at an early date through the medium of the Acapulco-Manila galleons.

Illustrative specimen from Manila, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 363*).

ADENOSTEMMA Forster

Adenostemma viscosum Forst.; Llanos Frag. Pl. Filip. (1851) 90; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 70=**ADENOSTEMMA LAVENIA** (Linn.) O. Kuntze.

Forster's species was correctly interpreted by Llanos, but the Linnean specific name is older. It is widely distributed in the Philippines, extending from sea level to an altitude of at least 2,000 meters.

Illustrative specimen from Calumpit, Bulacan Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 696*).

EUPATORIUM Linnaeus

Eupatorium ayapana Vent.; Blanco Fl. Filip. (1837) 619; ed. 2 (1845) 432; ed. 3, 3 (1879) 9=**EUPATORIUM TRIPLINERVE** Vahl Symb. Bot. 3 (1794) 97.

This Mexican species was introduced into the Philippines by the Spaniards for medicinal purposes and still persists in cultivation, although very rare at the present time. It is locally known as *ayapana*, the name introduced with the plant. Blanco states that it flowers in January, but I have never seen it in flower.

Illustrative specimen from cultivated plants, Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 517*).

MIKANIA Willdenow

Knautia sagittata Blanco Fl. Filip. (1837) 54 (sp. nov.); ed. 2 (1845) 36; ed. 3, 1 (1877) 67=**MIKANIA SCANDENS** Willd.

The species is widely distributed in the Philippines, but has every appearance of having been introduced; it is not a true native of the Archipelago. Blanco's description of *Knautia sagittata* unmistakably applies to Willdenow's species.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 578*).

GRANGEA Adanson

Perdicium tomentosum Blanco Fl. Filip. (1837) 630; ed. 2 (1845) 439; ed. 3, 3 (1879) 21, non Thunb.=**GRANGEA MADERASPATANA** (Linn.) Poir.

This weed is of local occurrence in the Philippines, growing in and about towns at low altitudes in the settled areas. It is undoubtedly an introduced plant in the Archipelago.

Illustrative specimen from Calumpit, Bulacan Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 657*).

ERIGERON Linnaeus

Baccharis ivaefolia Blanco Fl. Filip. (1837) 627; ed. 2 (1845) 437; ed. 3, 3 (1879) 16, non Linn.=**ERIGERON LINIFOLIUS** Willd.

Blanco's species was reduced by Fernandez-Villar to *Conyza viscidula* Wall., to which the description does not at all apply. The only Philippine species in the entire family that agrees at all closely with Blanco's description is *Erigeron linifolius* Willd., and I have no doubt that Willdenow's species is the one he intended; it is a weed in the settled areas throughout the Philippines and is especially abundant in recently cleared lands.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 367*).

BLUMEA de Candolle

Conyza balsamifera Linn.; Blanco Fl. Filip. (1837) 628; ed. 2 (1845) 438; ed. 3, 3 (1879) 18, *t. 403*=**BLUMEA BALSAMIFERA** (Linn.) DC.

This species is common and widely distributed in the Philippines in the settled areas at low and medium altitudes; probably introduced and of prehistoric introduction. It is widely known as *sambong*.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 439*).

Conyza dentata Blanco Fl. Filip. (1837) 629, non Linn.=**Conyza cappa** Blanco op. cit. ed. 2 (1845) 438; ed. 3, 3 (1879) 18, non Ham.=**BLUMEA LACERA** DC., var.

Fernandez-Villar considered that Blanco correctly interpreted

Conyza cappa Ham., and placed it under *Inula cappa* DC., a species not known from the Philippines. There is every reason to believe that the plant Blanco intended was a form of the variable, common, and widely distributed *Blumea lacera* DC. His description, however, is wholly inadequate and is translated as follows: Leaves lanceolate, decurrent, the margins with obtuse teeth, the upper surface rough, the lower villous. A plant two feet high utilized by the natives for the same purposes as *Blumea balsamifera* DC.

Conyza gouani Blanco Fl. Filip. (1837) 629, non Willd.=**Conyza erosa** Blanco op. cit. ed. 2 (1845) 439 (sp. nov.); ed. 3, 3 (1879) 19=? **BLUMEA LACINIATA** DC.

The form described by Blanco is widely distributed in Luzon, but it is not clear whether or not it is identical with *B. laciniata* DC. The specimens selected to illustrate Blanco's species are apparently more robust and less pubescent than the form he described.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1914 (*Merrill: Species Blancoanae No. 257*).

PLUCHEA Cassini

Baccharis indica Linn.; Blanco Fl. Filip. (1837) 627; ed. 2 (1845) 438; ed. 3, 3 (1879) 17=**PLUCHEA INDICA** (Linn.) Less.

The Linnean species was correctly interpreted by Blanco. It is widely distributed along the seashore in the Philippines.

Illustrative specimen from Pasuquin, Ilocos Norte Province, Luzon, November, 1916 (*Merrill: Species Blancoanae No. 989*).

EPALTES Cassini

Cotula quinqueloba Blanco Fl. Filip. (1837) 626; ed. 2 (1845) 436; ed. 3, 3 (1879) 15, non Linn. f.=**EPALTES AUSTRALIS** Less. in Linnaea 5 (1831) 148.

Cotula quinqueloba Blanco was reduced by Fernandez-Villar to *Centipeda orbicularis* Lour., but this reduction is impossible as Blanco's description does not at all apply to Loureiro's species, although *Centipeda orbicularis* Lour.=*C. minima* (Linn.) Willd. is not uncommon in the Philippines. Blanco's description applies unmistakably to *Epaltes australis* Less., which grows in the habitats indicated by Blanco. The species is of very local occurrence in the Philippines, growing as a weed in dried out rice paddies. See J. R. Drummond ex Merrill & Rolfe in Philip. Journ. Sci. 3 (1908) 126 for a critical note on Lessing's species.

Illustrative specimen from Manila, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 773*).

SPHAERANTHUS Linnaeus

Sphaeranthus alatus Blanco Fl. Filip. (1837) 635 (sp. nov.) = **Sphaeranthus indicus** Blanco op. cit. ed. 2 (1845) 442 (*Sphaerantus*); ed. 3, 3 (1879) 29, non Linn. = **SPHAERANTHUS AFRICANUS** Linn.

Fernandez-Villar considered that Blanco correctly interpreted *Sphaeranthus indicus* Linn., but this species has never been found in the Philippines. The plant Blanco described is undoubtedly *S. africanus* Linn., which is a common weed in and about towns in the settled areas of the Archipelago.

Illustrative specimen from Obando, Bulacan Province, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 396*).

PTEROCAULON Elliott

Sphaeranthus elongatus Blanco Fl. Filip. (1837) 636 (sp. nov.); ed. 2 (1845) 443; ed. 3, 3 (1879) 30 = **PTEROCAULON REDOLENS** (Forst.) F.-Vill. (*P. cylindrostachyum* Clarke).

A weed, occasional in and about towns, in fallow lands, etc., certainly introduced in the Philippines.

Illustrative specimen from Bataan Province, Luzon, July, 1913 (*Merrill: Species Blancoanae No. 341*).

GNAPHALIUM Linnaeus

Xeranthemum staehelina Blanco Fl. Filip. (1837) 629, non Linn. = **Gnaphalium dichotomum** Blanco op. cit. ed. 2 (1845) 439; ed. 3, 3 (1879) 20, non Willd. = **GNAPHALIUM LUTEO-ALBUM** Linn.

This species is widely distributed in the mountains of northern Luzon; Blanco's material was from Agoo, Union Province, Luzon. While the specimens undoubtedly represent the species Blanco described, I am not sure that they are *Gnaphalium luteo-album* Linn. Radlkofer has suggested to me that the Philippine *Gnaphalium luteo-album*, so named, may be a *Helichrysium*.

Illustrative specimen from Baguio, Benguet Subprovince, Luzon, May, 1914 (*Merrill: Species Blancoanae No. 17*).

ECLIPTA Linnaeus

Anthemis cotula Blanco Fl. Filip. (1837) 633, non Linn. = **Artemisia viridis** Blanco op. cit. ed. 2 (1845) 436 (sp. nov.); ed. 3, 3 (1879) 14, *t. 284*, non Linn. = **ECLIPTA ALBA** (Linn.) Hassk.

This species is very common and widely distributed in the settled areas of the Philippines, but certainly is an introduced plant in the Archipelago.

Illustrative specimen from Manila, Luzon, October, 1913 (*Merrill: Species Blancoanae No. 544*).

WEDELIA Jacquin

Spilanthes acmella Blanco Fl. Filip. (1837) 620 (*Spilanthus*); ed. 2 (1845) 433 (*Spilantes*); ed. 3, 3 (1879) 10, non Murr.=**WEDELIA BIFLORA** (Linn.) DC.

Spilanthes peregrina Blanco op. cit. 622 (sp. nov.); 434; 10=**WEDELIA BIFLORA** (Linn.) DC.

Fernandez-Villar considered that Blanco correctly interpreted *Spilanthes acmella*, but the description under that name applies entirely to *Wedelia biflora* DC. Blanco's description of *Spilanthes peregrina* is very short, but I can see no reason for considering that it represents a distinct species. The plant is found near the sea throughout the Philippines and is widely known as *hagonoy*.

Illustrative specimen from Taytay, Palawan, May, 1913 (*Merrill: Species Blancoanae No. 528*).

SPILANTHES Linnaeus

Spilanthes lobata Blanco Fl. Filip. (1837) 622 (sp. nov.); ed. 2 (1845) 434; ed. 3, 3 (1879) 11=**SPILANTHES ACMELLA** Murr.

This species is of local occurrence in the Philippines at low altitudes in the settled areas; certainly an introduced weed.

Illustrative specimen from Los Baños, Laguna Province, Luzon, March, 1914 (*Merrill: Species Blancoanae No. 491*).

COREOPSIS Linnaeus

Coreopsis gracilis Blanco Fl. Filip. ed. 2 (1845) 591 (*Cereopsis*) (sp. nov.); ed. 3, 3 (1879) 25=? **COREOPSIS TINCTORIA** Nutt.

Fernandez-Villar reduced this to *Cosmos caudatus* HBK., to which, however, Blanco's description does not at all apply. Blanco's specimens were from cultivated plants, which he thought were introduced from Mexico. *Cosmos caudatus* HBK. has pink ray-flowers, while Blanco distinctly states that the ray flowers of *Coreopsis gracilis* were yellow with a brown spot. He may have had a form of *Coreopsis tinctoria* Nutt., but his description of the achenes does not apply to Nuttall's species. The form described by Blanco is apparently no longer to be found in the Philippines.

BIDENS Linnaeus

Bidens bipinnata Blanco Fl. Filip. (1837) 623; ed. 2 (1845) 435; ed. 3, 3 (1879) 12, non Linn.=**BIDENS CHINENSIS** Willd.

This species is widely distributed in the Philippines in the settled areas; certainly introduced. *Bidens chinensis* Willd. has very generally been reduced to *B. pilosa* Linn. as a synonym, but is apparently distinct.

Illustrative specimen from Camarines Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 414*).

TAGETES Linnaeus

TAGETES PATULA Linn.; Blanco Fl. Filip. (1837) 632; ed. 2 (1845) 440; ed. 3, 3 (1879) 23, *t. 404 bis* (as *T. erecta* Linn.).

The Linnean species seems to have been correctly interpreted by Blanco. It is cultivated throughout the Archipelago for ornamental purposes and is thoroughly naturalized in valleys in some parts of Benguet Subprovince above an altitude of 600 meters. Its common name is *amarillo*.

Illustrative specimen from Manila, Luzon, October, 1914 (*Merrill: Species Blancoanae No. 69*).

CHRYSANTHEMUM Linnaeus

Matricaria chamomilla Blanco Fl. Filip. (1837) 631; ed. 2 (1845) 440; ed. 3, 3 (1879) 22, *t. 290*, non Linn.=**CHRYSANTHEMUM INDICUM** Linn.

This species is commonly found in cultivation in the settled areas of the Philippines but is not spontaneous. It is universally known as *manzanilla*. It was probably introduced by the Spaniards.

Illustrative specimen from Camarines Province, Luzon, December, 1914 (*Merrill: Species Blancoanae No. 307*).

Pyrethrum sinense DC.; Llanos Frag. Pl. Filip. (1851) 92; F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4^1 (1880) 70=**CHRYSANTHEMUM SINENSE** Sabine.

This form, briefly mentioned by Llanos, is the one occasionally found in cultivation in the Philippines, the flowers white to purplish. A very depauperate form of the commonly cultivated *Chrysanthemum sinense* Sabine.

ARTEMISIA Linnaeus

ARTEMISIA VULGARIS Linn.; Blanco Fl. Filip. (1837) 625; ed. 2 (1845) 435; ed. 3, 3 (1879) 14, *t. 329*.

The Linnean species was correctly interpreted by Blanco. It is not uncommon in cultivation in and about towns at low altitudes and is frequently found growing spontaneously at medium altitudes. It is quite generally known as *damong maria* and was undoubtedly introduced into the Philippines by the Spaniards.

Illustrative specimen from Antipolo, Rizal Province, Luzon, January, 1915 (*Merrill: Species Blancoanae No. 800*).

GYNURA Cassini

Cacalia sarracenica Blanco Fl. Filip. (1837) 618, non Linn.=**Senecio cacaliaster** Blanco op. cit. ed. 2 (1845) 441; ed. 3, 3 (1879) 24, non Lam.=**GYNURA SARMENTOSA** DC.

Blanco's species was reduced by Fernandez-Villar to *Gynura*

angulosa DC., which does not occur in the Philippines. While the original description leaves much to be desired, there is very little doubt that the plant Blanco had in hand when he wrote his description was *Gynura sarmentosa* DC., a species of wide distribution in the Philippines.

Illustrative specimen from San Antonio, Laguna Province, Luzon, October, 1915 (*Merrill: Species Blancoanae No. 950*).

CARTHAMUS Linnaeus

Carthamus dentatus Blanco Fl. Filip. (1837) 616, non Vahl=**CARTHAMUS TINCTORIUS** Linn.; Blanco op. cit. ed. 2 (1845) 431; ed. 3, 3 (1879) 6.

The Linnean species was correctly interpreted by Blanco and was undoubtedly introduced into the Philippines in prehistoric times. The species is still occasionally found in cultivation, never wild. It is commonly known as *casumba*.

Illustrative specimen from Los Baños, Laguna Province, Luzon, *comm. F. C. Gates*, March, 1914 (*Merrill: Species Blancoanae No. 614*).

EMILIA Cassini

Cacalia sonchifolia Linn.; Blanco Fl. Filip. (1837) 618=**EMILIA SONCHIFOLIA** (Linn.) DC.; Blanco op. cit. ed. 2 (1845) 432; ed. 3, 3 (1879) 8, *t. 282*.

The Linnean species was correctly interpreted by Blanco. It is widely distributed in the Philippines at low and medium altitudes as a weed in the settled areas; undoubtedly introduced.

Illustrative specimen from Camarines Province, Luzon, December, 1913 (*Merrill: Species Blancoanae No. 329*).

SPECIES OF WHOLLY UNCERTAIN STATUS

Vangueria stellata Blanco Fl. Filip. (1837) 167 (sp. nov.); ed. 2 (1845) 117; ed. 3, 1 (1877) 210=?

Fernandez-Villar reduced this to *Vangueria spinosa* Roxb., a species that does not extend to the Philippines and one to which Blanco's description does not apply. According to the data given by Blanco the form that he described is a very characteristic one, yet I know of no Philippine species presenting the combination of characters indicated by him. It is suspected that the description was based on material originating from two different plants.

Baranda angatensis Llanos in Mem. Acad. Cienc. Madr. 2 (1859) 502 (gen. et sp. nov.); F.-Vill. & Naves in Blanco Fl. Filip. ed. 3, 4[1] (1880) 102=?

This is wholly indeterminable from the meager data given by Llanos. Fernandez-Villar reduced it to *Barringtonia macros-*

tachya Kurz, a species that does not extend to the Philippines. There is very little reason for even considering it a *Barringtonia*, Llanos's description being exceedingly vague and imperfect.

Brabejum ? caliculatum Blanco Fl. Filip. ed. 2 (1845) 39 (sp. nov.); ed. 3, 1 (1877) 72 (*calyculatum*) = **LORANTHUS BLANCOANUS** F.-Vill. (type!) = ?

A species of wholly doubtful status, certainly no representative of the *Loranthaceae*, as Blanco describes the ovary as superior. *Loranthus blancoanus* F.-Vill. is merely a new name for *Brabejum caliculatum* Blanco. Attempts to locate this species in Cebu under the Visayan name *malabachao*, cited by Blanco for it, brought in specimens of *Bruguiera cylindrica* Blume that do not agree at all with Blanco's description. I can make no suggestion as to its proper place.

Celosia bicolor Blanco Fl. Filip. (1837) 191 (sp. nov.) = **Celosia glauca** Blanco op. cit. ed. 2 (1845) 135; ed. 3, 1 (1877) 242, non Rottl. = ?

Fernandez-Villar reduced this to *Celosia philippica* (Weinn.) Steud., a species entirely unknown to me. If Blanco's description be correct, *Celosia bicolor* Blanco can be no amaranthaceous plant. His specimens were from Malabrigo Point, Batangas Province, Luzon, and he states that it was to be found in many regions. I know of no Philippine species that conforms with his rather imperfect description, but in some particulars it is suggestive of *Ammannia* of the *Lythraceae*.

Malsherbia globosa Blanco Fl. Filip. ed. 2 (1845) 454 (sp. nov.); ed. 3, 3 (1879) 54 = ?

Fernandez-Villar reduced this to *Hydrangea oblongifolia* Blume, a species that does not extend to the Philippines, and one that does not conform to Blanco's description in any particular. The description of *Malsherbia globosa* applies to a very strongly marked and characteristic plant, but I can suggest no reduction for it. The description of the leaves and stem conforms well to *Medinilla magnifica* Lindl., but the description of the single flower seen by Blanco applies to some entirely different plant. His material was from Bolhoon, Cebu, the plant there known as *mampol*.

Mangifera pinnata Blanco Fl. Filip. (1837) 182; ed. 3. 1 (1877) 231, non Linn. f., nec Lam. = ?

A species of wholly doubtful status except that it is perhaps a representative of the *Meliaceae* or *Burseraceae*. It has nothing to do with *Mangifera pinnata* Linn. f. = *Spondias pinnata* Kurz. Blanco's description is very indefinite and imperfect, and he states that the tree was "scarcely known;" he cites no locality,

and the native name *tagapi* is apparently unknown, or, at least, it does not appear on any of our Philippine specimens.

Ornithrophe triandra Blanco Fl. Filip. (1837) 291 (sp. nov.) = **Schmidelia triandra** Blanco op. cit. ed. 2 (1845) 218 (comb. nov.); ed. 3, 2 (1878) 42 = ?

I know of no Philippine sapindaceous plant that conforms to Blanco's description. The description is short and very imperfect. It is certainly not *Schleichera trijuga* Willd., where it was placed by Fernandez-Villar, Willdenow's species not extending to the Philippines.

Polyscias disperma Blanco Fl. Filip. (1837) 226 (sp. nov.) = ?

A species of wholly doubtful status, not included in the second or third edition of the Flora de Filipinas. Fernandez-Villar reduced it to *Arthrophyllum diversifolium* Blume, where it cannot possibly belong. The description, very short and imperfect, is translated as follows: Leaves opposite, lanceolate, entire, glabrous. Petioles very short. Flowers in a terminal panicle, the fruit 2-seeded, epidermis bony. A non-parasitic shrub observed along the beach in Batangas. It is very probable that Blanco had specimens of *Grumilea* or *Psychotria*, of the *Rubiaceae*.

Sterculia glandulosa Blanco Fl. Filip. (1837) 764 (sp. nov.); ed. 3, 3 (1879) 164.

A species of wholly doubtful status and one that cannot be determined from the very brief and imperfect description given by Blanco. Blanco himself, apparently dissatisfied with his original description, excluded the species in the second edition of his Flora. The species may not belong in the *Sterculiaceae* and is possibly a myristicaceous plant.

Sulipa globosa Blanco Fl. Filip. ed. 2 (1845) 348 (sp. nov.); ed. 3, 2 (1878) 280 = ?

Fernandez-Villar reduced this to *Planchonia littoralis* Blume, an impossible reduction of it. The fruit only is described, and the description is so imperfect that nothing can be made of it except that it possibly refers to some rubiaceous plant. The fruit was claimed by Blanco to be used in Maragondong, Cavite Province, Luzon, for poisoning fish, but repeated inquiries made in Maragondong, as to plants there used for poisoning fish, yielded only the well-known *Anamirta cocculus* W. & A., *Derris elliptica* Benth., *Croton tiglium* L., and *Callicarpa blancoi* Rolfe.

ILLUSTRATION

PLATE I. Sketch map of the Philippine Islands. The red spots indicate the approximate regions from which Blanco secured his botanical material. Most of his data were based on plants observed in the provinces contiguous to Manila.

PLATE I. THE PHILIPPINE ISLANDS, SHOWING THE LOCALITIES FROM WHICH BLANCO RECEIVED HIS BOTANICAL MATERIAL.

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